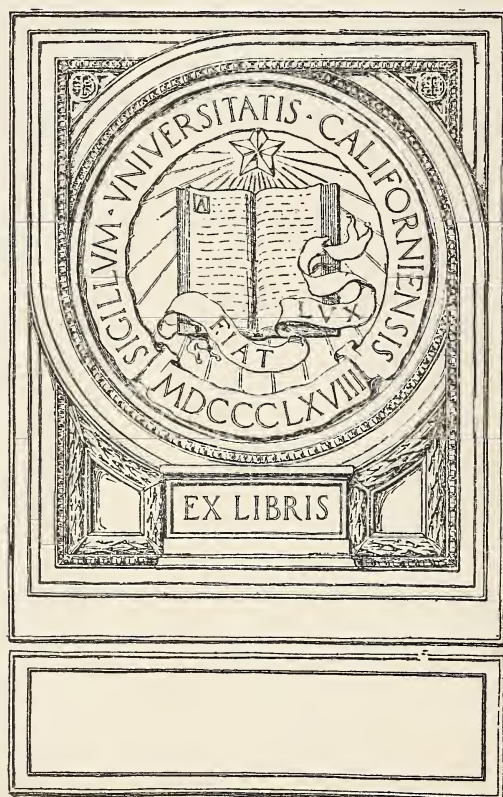
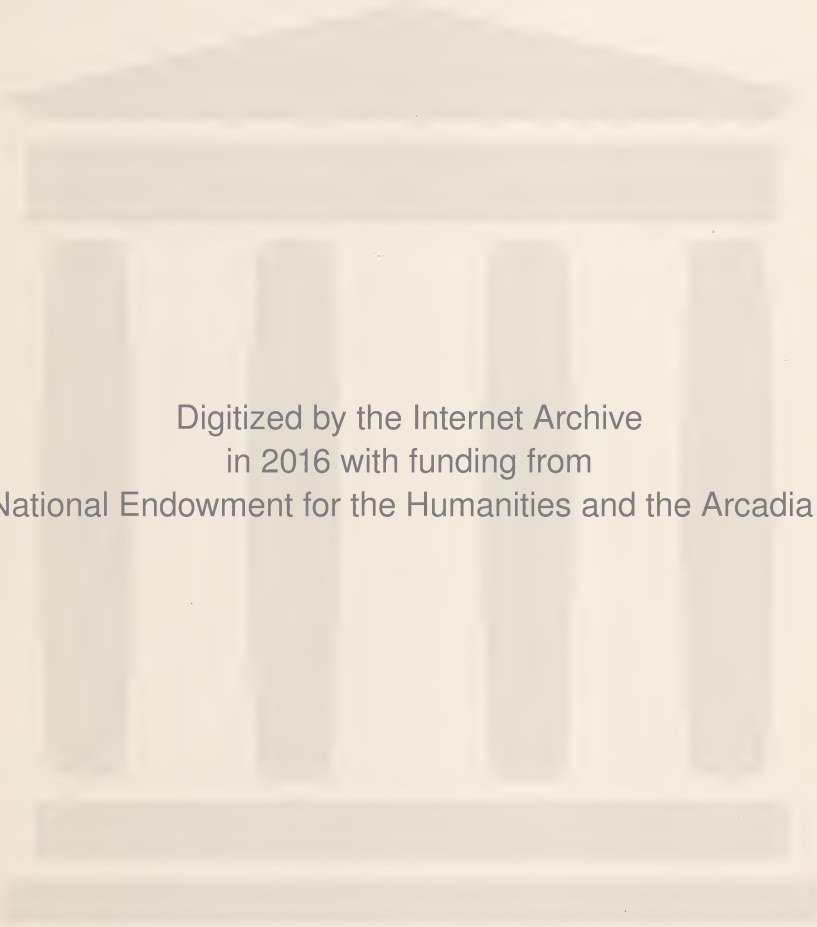


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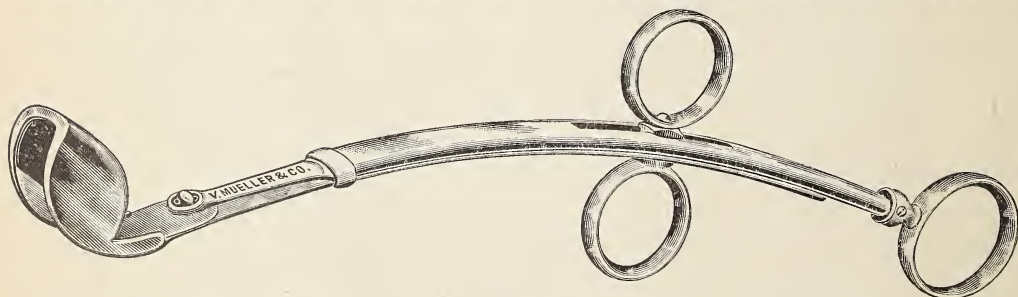
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ADDRESS ON SURGERY

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To every surgeon probably has come once or oftener the humiliating experience of operating upon a patient for what he had carefully diagnosed as chronic appendicitis, only to find, after removal of the appendix, that the symptoms persisted without improvement. Ofttimes the primary operation has been supplemented by a drainage of the gall-bladder or, if the patient be a woman, by the removal of an ovary. And still the patient experienced no relief. Somewhat similar experiences have followed the surgical history of supposed gastric ulcer where gastro-enterostomy, in the absence of demonstrable pyloric obstruction, has proved so disappointing. To palliate our failures in these operations about the appendix, gall-bladder, and stomach we have been wont to fall back on the all-embracing diagnosis **neurasthenia**, which enabled the surgeon to smoothly edge from under the load of responsibility, but left the patient hopelessly mired in the slough of despond.

Such experiences naturally have been exceedingly distressing to the conscientious surgeon and have correspondingly stimulated our zeal in efforts to avoid similar errors and, better still, to discover some solution of our dilemma. Closer observation of pathological conditions, wider investigation of the accessory surgical field, and more exacting analysis of symptoms have thus become imperative. And to-day we are beginning to reap the fruit in the definition of other lesions which explain our former errors of diagnosis and point the way to possible rescue from despair of many of these unfortunates.

In 1908 the writer presented to the Western Surgical Society some observations on certain pathological changes found about the right colon to which he applied the descriptive name "Membranous Pericolitis," or the "Pericolie Membrane." These conclusions were the culmination of isolated individual observations of about six years. The first observation was made in 1902 in a case with the following history:

The patient was first seen by us when she was a probationary nurse in the University Hospital of our city several years before. We were then consulted for what was supposed to be an acute exacerbation of a long-standing case of chronic appendicitis. She gave the history of a number of previous attacks. In each case she had suffered from pain and distress over her entire right abdomen, though more particularly referred by her to the site of the appendix. In none of these attacks had she had temperature or pulse disturbances,—in fact, none of the characteristics of an acute appendicitis or peritonitis. She had gone to bed, however, frequently for a day just from pain and discomfort. She said that she had never felt entirely comfortable in her right side for years, but did reasonably well except when these severe "spells" came on. She was a very attractive young woman in her personality, and quite intelligent, though of a decidedly high-strung temperament and somewhat neurotic. She described her symptoms very freely,—in fact, was more fluent than is the average woman in portraying her complaints. We found her with a normal pulse and temperature. On palpation she complained of tenderness all over the right abdomen, was indeed quite hyperesthetic. There was no rectus rigidity. Her greatest tenderness she located about the appendicular region in general, but we could not focalize to a finger-point. We fell in quite readily, however, with a diagnosis of chronic recurrent appendicitis and recommended operation upon her recovery from this "spell." There was no suggestion of urgency. When she got up, however, still being a probationer, the superintendent of nurses decided not to accept her in training, as she considered her too neurotic to make a satisfactory nurse. She therefore left the hospital, and we did not see her again for three or four years. She then came to Kansas City from her home in Iowa, where she had married and then lived, to consult us again. We then learned that in the interval she had been operated upon by a distinguished surgeon, whom we knew, and had had her appendix removed. She obtained no relief from the operation, however, and continued to suffer as before. A second operation was done and one of her ovaries removed. Still no relief, and with this history she returned to us. On examination, with the appendix and one ovary gone, we could find no explanation for her continued symptoms. She was therefore referred to one of our leading internists, who sent her back again, saying that the other ovary was diseased and should be removed. We could not confirm this diagnosis, but she insisted on relief, and we consented to operate on the diagnosis of our medical confrère. Operation disclosed the remaining ovary perfectly healthy. A perfectly healthy broad ligament was found on the side from which the ovary had been removed. We then decided to inspect the site of the appendix. Here we found a perfectly smooth cecum at the site where the appendix had been with not the slightest adhesion of any kind. Above the appendix, however, indeed, really above the cecum about the colon our attention was strikingly attracted to the condition with which this paper is concerned. Here we observed what looked like an entirely new layer of peritoneum, perfectly transparent, investing the colon from

above the cecum to the hepatic flexure. This membrane was very loosely attached, but moved freely over what appeared to be the normal coat of the colon beneath. This membrane appeared to come on to the colon from the outer parietal wall, into which it quietly faded away and, above the hepatic flexure of the colon, became lost in the transverse mesocolon. The membrane covered also the whole of the circumference of the colon and imperceptibly became lost in the inner side of colon and the inner parietal peritoneum. The whole right colon was rather closely confined in the lumbar fossa and could not readily be pulled forward. Likewise it seemed distinctly shortened in its long axis and at places presented a pleating, with the delicate fibrous strands of the investing membrane passing straight across from one fold to the other. It thus appeared as though the colon was restricted both as to the action of its circular and its longitudinal fibres and more or less immobilized to the posterior abdominal wall. There were no adhesions between the colon and any contiguous structure, and the membrane did not strike us as analogous to an adhesion in any sense. It looked instead as we have described, as a new adventitious, vascularized, investing layer of peritoneum. At the time of this, our first, observation it impressed us as some sort of an anatomical freak which we in no way associated in our mind with the woman's complaints. We made no attempt, therefore, to deal with the membrane in any way, and, with the simple observation of its peculiar appearance, closed up the abdomen. The patient was, of course, not improved in the least by our operation, though we were satisfied now with a diagnosis of neurasthenia, and placed her malady in her head and not in her abdomen.

In the course of years, both before and since this case, we can recall several cases of somewhat similar clinical picture in which we have operated with a diagnosis of chronic appendicitis and removed the appendix—but without the expected relief to our patient. These cases, being always considered uncomplicated chronic appendicitis, were operated with a very small abdominal incision, and the colon was not seen at all. The real condition in these cases is as yet conjectural, as we have had no opportunity to re-operate in any of them. In the light of other demonstrated cases, however, we now have a strong suspicion that this same pericolic membrane could be found in at least several of them.

Following this interesting case, however, we operated in several cases of somewhat the same type, and with the diffused symptoms were in doubt as to whether the trouble lay in the appendix or the gall-bladder. In several such cases, in order to expose both sides through one opening, we made a free right rectus incision midway which could be enlarged in either direction as found necessary. This incision thoroughly exposes the ascending colon. In several of these operations we found both appendix and gall-bladder perfectly normal, but, to our surprise and interest, again observed this same peculiar membrane.

In review of these several observations we became convinced that herein lay a certain very absolute pathological condition of more or less frequent occurrence. We were sure that similar observations must have fallen under the eye of practically every sur-

geon of any considerable experience, though none, so far as we knew, had given it any special consideration in pathological description nor recognized it as a condition of any common occurrence or clinical significance. The only article bearing on this subject which had come under our attention was a brief one by our fellow-surgeon, Binnie, on "Pericolitis Dextra," undoubtedly referring to the identical condition, but viewing these changes simply as adhesions, as doubtless had the other many observers. This general conception had led to rather cursory attention, with the general assumption of antecedent appendicitis and the hope of relief by ordinary appendectomy. In our opinion, however, we had to deal with a condition of rather more definite pathological specificity, the exact origin and nature of which should become a matter of moment.

Pathological Description.—In 1908, at the Kansas City General Hospital, we were fortunate enough to find a well-marked case in a patient dying from other causes, but with history of this type. This specimen was removed and submitted to careful examination by the pathologist, Dr. Frank J. Hall, who reported as follows:

"The specimen of ascending colon which you presented to me as a type of pericolitis you have been interested in exhibits the following gross and microscopic features: The specimen presents the caput coli with attached appendix, the ascending colon, and a short segment of the transverse colon.

"From a point just at the hepatic flexure to three inches above the caput there spreads from the parietal margin over the external lateral margin to the internal longitudinal muscle band a thin vascular veil in which long, straight, unbranching blood-vessels course, most of which are parallel with each other and take a slightly spiral direction over the colon from the outer upper peritoneal attachment to the inner lower portion of the gut, ending just above the caput. The appendix is not implicated in any way.

"Coursing with the blood-vessels are numbers of shining, narrow bands of connective tissue which gradually broaden as they go and end in a slight, fan-shaped attachment at various points on the anterior and inner surfaces of the colon. At these points of attachment the gut is held in rigid plication.

"The entire specimen conveys to the eye the idea that an edematous fluid lies beneath this delicate membrane and reminds one of nothing so much as an edematous arachnoid so often encountered on removing the dura mater from the brain of a dead alcoholic. The colon seems placed in a diaphanous bag slightly too short to contain it without wrinkling. At the beginning of the hepatic flexure the drawn membrane particularly angulates the contained tissue. Here and there are spots and tags of fat beneath the cobweb. On handling the specimen the colon slips about in its bag without entire freedom as a fetus within its amniotic sac. A portion of the parietal peritoneum has been removed with the colon, and shows that the membrane and blood-vessels arise in, and are continuous with, the structures of the parietal peritoneum as it sweeps over the colon. The entire structure seems to be peritoneum, loosened from its close connection to the abdominal wall and colonic surface by some serous exudate,

after which the particular vascularization and connective-tissue banding has occurred as a chronic reaction to irritative influence.

"Microscopic sections prepared from blocks of tissue cut entirely through to the lumen of the colon present, first, a very loose external covering, a normal musculature, a broad submucosa, and a normal glandular coat. Our chief interest lies in the serous coat, which is seen to have its fibres split asunder as if by serous infiltrate, thus lifting the endothelial layer of the membrane, which is clearly demonstrated to exist as a covering for all. The blood-vessels present in cross section and are unusually large and thin walled. Wherever a blood-vessel courses there also is a condensation of the white fibres into bands parallel to the vessel. The general aspect of the region under discussion is that of a mass of more or less isolated fascicles of white fibrous tissue, with here and there a blood-vessel filled with blood, broad clefts lined with endothelium, and a few fat and connective-tissue cells sprinkled here and there.

"No fibrin, polymorphonuclear leucocytes, or other evidences of inflammation are present. The connective tissue next to the layer of longitudinal muscular coat is condensed, and seems to penetrate in increased amount between the muscle bundles. Aside from this questionable matter, the gut and its walls are normal. The endothelial covering in places on the surface is perfectly preserved, and demonstrated beyond a doubt that we have here no new or false membrane, but simply a rarefied and otherwise altered natural structure. The enlargement of the endothelial-lined clefts so abundantly observed suggests a chronic lymphstasis as an associate condition, which is possibly a key to the formation of the amount of fluid in the tissue spaces of the peritoneum."

Clinical Description.—In addition to this description we would add some observations of the condition as observed now in quite a number of living subjects seen in the course of surgical operations. The transparent, vascularized veil appearance of the membrane strikes one's attention very forcibly with bright red vessels running parallel with the long axis of the ascending colon. In some instances it appears as though the membrane came on to the colon from the lateral parietal wall just above the cecum and courses directly upward, to disappear beneath the liver on the superior layer of the transverse meso-colon. In other instances it seems attached to the under surface of the liver well anterior to the normal peritoneal reflection. Again, in other cases, it appears as though it had begun above and descended on the colon to its termination usually just above the cecum.

Again we have seen it pass across and upward to the transverse colon, which in one instance was apparently drawn down by the membrane, practically paralleling the ascending colon to the level of the cecum. (In this case the gastric symptoms were marked as a result of the mechanical gastropsis thus produced.) In one instance this membrane was so dense as to lose entirely its apparent vascularity and transparency, and looked like a solid sheet of organized fibrous tissue, beneath which the ascending colon was so lost that it could not be seen at all until the membrane was divided and brushed aside, when an apparently normal, though contracted,

colon became evident. In one instance the membrane, passing from the colon across the parietal wall, went as far over as the jejunum, which was likewise completely invested for about eight inches of its distance immediately after its beginning beneath the transverse mesocolon. In this case the symptoms had been quite strikingly those of pyloric stenosis, which was the pre-operative diagnosis.

In no instance does this membrane resemble our ordinary conception of an adhesion. It is never adherent to the abdominal wall nor to any contiguous loops of small intestine. Instead, it resembles more closely than anything we can describe a thin pterygium. In recent cases the membrane is quite free and produces but limited restriction to the underlying colon. In more advanced and characteristic cases it seems to bind the colon close to the posterior abdominal wall, and produces such marked angulations and convolutions of the colon as to practically produce a stricture of its lumen. In fact, in one of these cases seen in autopsy, when a stream of water was caused to flow into the cecum through the ileocecal valve, the cecum distended almost to bursting, and yet none of the fluid would pass through the ascending colon and pass the hepatic flexure until it was milked through with the fingers. It is also noteworthy that in the large majority of cases the cecum was not involved in the membrane at all, but is found greatly distended and correspondingly thin. Nor was the appendix invested except when it occupied an ascending position at the outside of the colon, when it was covered by the membrane as it was reflected on to the colon from the lateral parietal wall. The appendix in almost every case, however, was rather small and sclerotic. We have seen the membrane in one case in which there had been years before an appendicular abscess which was drained. In this case the cecum was likewise markedly involved in the membrane. The angulation of the colon is generally most marked at the hepatic flexure. There is always a very loose space where the membrane can easily be picked up at the outer angle where it passes from the colon to the outer parietal wall.

Etiology.—The cause or origin of this condition has given rise to considerable speculation, with a number of quite diverse theories. These varied theories resolve themselves naturally into three general theories: (1) congenital, (2) mechanical, (3) inflammatory, each with certain minor differences.

1. Congenital.—Quite a number of observing surgeons have expressed the view that the membrane described is congenital in origin, but differ as to the exact anatomical derivation.

(a) Mayo is inclined to view this membrane as the true peritoneum, which, as the cecum descends, failed to settle itself closely in the normal way to the gut-wall, but, remaining loose, acquired the peculiarly excessive vascularization. If this were correct, we would wonder why similar peritoneal laxity did not extend to the cecum as well.

(b) Keiller of Galveston, in personal conversation, suggested the possibility that this membrane was a prolongation of the border of the great omentum which became attached to the ascending colon while it was still up beneath the stomach before complete rotation and was drawn down over the gut in its descent and remained as a separate layer of peritoneum. His view was suggested by the parallel arrangement of vessels as in the true omentum and the fact that it appeared so often to come on to the ascending colon from above and was practically continuous with the right border of the true omentum. This theory has recently been supported in print by Cotté of Lyons, France, who considers it as **one** of the types of membrane. In cases, such as our first and others reported (one by Pilcher), where the descending portion of the transverse colon is drawn parallel to the ascending colon and mutually covered by this membrane (double barrel, as Gerster describes), the suggestion looks plausible. We also have recently observed a case in which the lower portion of the usual omentum was fused with the pericolic membrane for a width of about two inches just above the ileocecal juncture, presenting a definite band of constriction, but free above entirely.

These congenital theories are attractive, and at the same time would offer the greatest encouragement to surgery. For, if such they be, a simple division of restricting bands, like tenotomy in congenital club-foot, should furnish relief, as should the method suggested by us in our original paper. However, so far we know of no observations of this condition in infancy or childhood. Furthermore, in all our cases the clinical history has been of adult origin. Perhaps, however, this can be explained by assuming that in early growth of the gut the membrane is sufficiently lax to permit freedom of peristalsis. Later on, however, as the gut grows in length or is lengthened by traction of the weight of stagnant feces, the membrane fails to stretch correspondingly, and hence begins to become a source of restriction. Then follow the clinical phenomena.

(c) We have noted as one of the attendant conditions of our pathological picture the great dilatation, elongation, and thinning of the cecum. As far back as 1904 Wilms of Germany called attention to a condition characterized by great motility and elongation of the cecum, to which he applied the term "Cecum Mobile," and to which he ascribed a chain of symptoms quite like those we have found in membranous pericolicitis. This condition of the cecum is generally congenital, and, if the symptoms in our cases are due to the condition presented by the cecum alone, we should recognize here likewise a congenital origin. Dreyer (Breslau), however, in anatomical studies found the cecum freely movable in as large as sixty-seven per cent of subjects, and hence questions the mobile cecum in itself as a factor of much importance. In our observations we have been inclined to consider the enlargement of the cecum as a second-

ary change, its gradual dilatation being the result of long-continued distention by gas and feces which are retained in the cecum owing to the obstruction in the colon above, caused by the restrictions of the pericolic membrane. Wilms, however, claims the existence of a symptom producing mobile cecum without membranes, adhesions, or kinks. Such must be rare in our observation.

2. **Mechanical.**—All are familiar with the noteworthy and frequent papers of Arbuthnot Lane of London on "Chronic Constipation" and "Chronic Intestinal Stasis." Beginning with intestinal stasis, primarily dependent upon transition in man to the erect posture with evolutionary social changes and habits favoring stasis, Mr. Lane traces an extraordinarily interesting chain of sequences, both pathological and clinical. Among these pathological changes he describes adhesions about the terminal ileum, appendix, ascending colon, the hepatic and splenic flexures, and sigmoid, all of which he considers as accessory ligaments formed to antagonize the downward strain, with tendency to prolapse of these segments of the intestinal tube. These adhesions, as described by Mr. Lane, are intended to be conservative and protective, though he admits they sometimes go too far and become obstructive. American observers have confirmed Lane's observations, practically concerning the kink (Lane's kink) near the terminus of the ileum and the adhesions (if such they be) about the ascending colon and hepatic flexure. His more elaborate or extensive descriptions have not often been verified, however, in this country. We are of the opinion, however, that what he has described simply as "adhesions" is, in fact, the same condition we have endeavored to present, though his observations have evidently been very lacking in descriptive significance and clarity. Likewise, while simple intestinal stasis may act in some manner as a cause in the production of these "adhesions," it is the "adhesions" which produce the suffering. Likewise, it may be pertinent to inquire if the "adhesions" may not, instead, be or become the cause of the stasis. At all events, we are persuaded that something definitely more than chronic constipation must exist to occasion either the pathologic or the clinical picture presented by membranous pericolicitis. For all have seen the most stubborn and complete cases of constipation with no such pathological picture at all and oftentimes without any further clinical symptoms. We think this membrane is therefore something other than physiologic response to mechanical demand.

3. **Inflammatory.**—Two general theories of the origin, based upon the assumption of inflammatory origin, have been presented, one assuming a spreading peritonitis from points of original infection, **without**, and the other a reaction from infection **within** the **contiguous** gut.

(a) **Without.**—Undoubtedly our older views of this condition accepted it as one of true adhesion, the result of old infection trans-

mitted from, most usually, the appendix, or, in case of particular involvement about the hepatic flexure, from the gall-bladder; and upon this hypothesis it was confidently expected that the simple removal of the appendix or the drainage of the gall-bladder would suffice to cure. This surgical effort has proved a failure. This failure, however, does not suffice to disprove the theory, as the "adhesions" which are the effect of the original disease may suffice to become a secondary and effective cause of their own train of symptoms, and, even though the original focus is removed, this secondary cause remaining now becomes a primary source of importance. Hertzler, who also made microscopic examination of specimens from some of our earlier cases, believes the condition one of "varicosity of the peritoneum," due to a more or less distant inflammation, and that the membrane ("pseudo-peritoneum") itself consists of peritoneum mobilized by a hyaline degeneration of the subperitoneal connective tissue. The clinical history, however, does not show in these cases any sufficient evidences of a true peritonitis originating from a focus which would produce such broad results, apparently.

(b) **From Within.**—Perhaps the majority of surgical observers have held to the view that the peritoneal reaction is from infection within the colon. Gerster concludes that "the peritoneum reacts to the infectious process ordinarily associated with **chronic colitis** by the formation of characteristic vascularized transparent membranes (pseudo-peritoneum) which take their origin along the external lateral aspects of the cecum, ascending colon, and hepatic flexure on the one side, and the sigmoid flexure, descending colon, and splenic flexure on the other."

Pilcher, likewise, "considers them to be **the result of long-continued or oft-repeated mild infections of the peritoneal covering of the cecum and appendix** transmitted through the intestinal wall," but does not specifically presume a colitis, as does Gerster.

The pathological report of Dr. Hall, quoted earlier in the paper, finds no microscopic evidences of change in the mucous or submucous coats to confirm with the true colitis. When we reflect that the area of gut most affected is that from which most of the **physiologic absorption** takes place in the normal tube it is not difficult to assume that through this segment mild infection and toxins may likewise pass to the peritoneum without necessarily concomitant inflammation of the mucous lining, though the latter may, and doubtless often does, coexist. M. L. Harris is a positive advocate of the inflammatory theory, and believes that the anaerobic bacteria described by Runeberg and Keyde, which are always resident in this portion of the intestinal canal, are the specific factors in the production of the peculiar vascularizing inflammation characteristic of this pericolicitis.

Our personal observation of now a considerable number of cases

at operation rather inclines us to the belief that perhaps varied causes may be responsible for the production of this pericolic membrane. We have one case, previously reported, in which the membrane (in this case involving the entire cecum as well) was undoubtedly the sequence of an antecedent acute peritonitis of appendicular origin. This case had been one of walled-in appendicular abscess, with drainage without removal of the appendix. At the time of our later operation all the walling-in adhesions were gone, but the vascular membrane was well marked. This is the only one of our cases with antecedent acute appendicitis. We have also seen one or two cases which strongly suggested a congenital origin and verified a suspicion of the correctness of Keiller's (also Cotte's) omental idea. Also a few cases with alternating constipation and diarrhea have led us to suspect a coincident colitis, as believed by Gerster. In quite the larger percentage of cases, however, we are of the opinion that the view suggested by Dr. Hall is correct. This opinion is the only one thus far substantiated by microscopic study including the entire gut. We do not assume, however, that one can be dogmatic concerning the revelations of only one case of real pathologic study. Surely, however, surgery here presents a definite problem worthy of the extended studies of the pathologist, whose aid must be invoked in the solving of the question of pathogenesis, since upon this solution may rest in such large measure the correct direction of surgical effort.

Symptomatology.—While the observation of our early cases was producing certain fixed opinions of a definite pathology, we were also, in the study of the clinical manifestations gradually, greatly impressed with certain striking similarities in the clinical histories of each. These impressions were remarked to several of our surgical colleagues, and, becoming likewise interested in the subject, they were soon able to confirm both the pathological picture and the clinical syndrome. Finally, from these repeated personal observations, and with the assurance offered by the corroborative evidence of these colleagues, we became convinced that this interesting pathological condition should be susceptible of absolute clinical diagnosis. Finally, in the early part of May, 1908, came the first case in which we attempted to make such a diagnosis before operation. This diagnosis was fully confirmed when the abdomen was opened. Between this time and that of the publication of my original paper in March, 1909, we operated upon nine cases in which this membrane was found, and in no case where such diagnosis had been made did we fail to find the corresponding pathological picture. This clinical report of several of these cases was given in detail in our original paper and will not be repeated here. These conclusions have been further confirmed by an experience in the observation of, at the present, in all, about thirty-five cases. We feel, therefore, that this positive

pathological condition has an equally positive clinical picture. The following symptoms combined are usually sufficient to establish a definite clinical syndrome:

1. **Pain.**—In every case pain has been the dominant symptom which has caused the patient to be referred to us for surgical relief, usually in the belief that the patient was suffering from appendicitis or gall-stones or, in several instances, gastric ulcer. This pain practically always has at some period a definite abrupt onset. Sometimes the pain is quite severe, sometimes no more than distinct distress. When once started the case is usually distinctively progressive in its development, though oftentimes, in the early stages, with remissions of comparative comfort for variable periods. Later the pain or discomfort is practically constant, though marked by periods of acute exacerbations (“spells”), oftentimes requiring morphine for relief. The pain is quite generally diffused over the entire right side of the abdomen, though oftentimes particularly accentuated over the cecum and at the hepatic flexure beneath the ribs. These several attacks of pain are not, however, as a rule, attended by any elevation of temperature or by any pulse disturbance. They are rarely, if ever, referred to the epigastrium.

2. **Tenderness.**—A diffuse tenderness is likewise characteristic, but **without any attendant rectus rigidity**. This tenderness oftentimes approaches an hysterical **hyperesthesia**, and may be such as to render the pressure of clothing quite unbearable. While, like the pain, the tenderness is diffused pretty well over the entire right side of the abdomen, particular points are frequently observed low down in the groin, at McBurney’s point, and just beneath the costal margin. These particular points of tenderness generally lead the practitioner to refer the case to a surgeon with a diagnosis of either ovarian trouble, chronic appendicitis, or gall-stones—or a combination of each. The **distinctly localized** symptoms of these varied conditions, however, are lacking.

3. **Constipation.**—Constipation is marked, particularly in well-developed cases, and large doses of any cathartic are required to secure evacuation of the bowels. The thorough emptying of the gut, however, oftentimes affords distinct but transitory relief. Castor oil usually cures for a few days. In some instances the constipation has existed long before the pains began, sometimes there was none before. It is certainly exaggerated after their onset.

4. **Bloating by Gas.**—The formation of gas with much bloating is usually a marked symptom, particularly in the periods of exacerbation. This bloating is most marked in the lower abdomen, and is due to the great distention of the cecum. It tends to grow worse and in itself causes much distress, and the patient complains much of the constriction of clothing. This gaseous distention of the cecum is oftentimes sufficient to be apparent to the eye in inspection of the

abdomen. On palpation the fulness is evident, and gurgling is readily demonstrated by manipulation with the fingers. Sometimes relief is experienced by pressure over the cecum, as in leaning against a table or bed or lifting the lower right abdomen with the hands. Sometimes, under such manipulation, the gas can be felt to pass onward with corresponding relief. Abdominal massage properly used may give temporary relief.

5. **Mucous Diarrhea.**—In long-standing case constipation may alternate with mucous diarrhea. In nearly all cases some mucous will be found on examination of the stools, but is usually not sufficient to attract the attention of the patient, and the fact is only elicited on direct inquiry.

6. **Gastric Disturbances.**—Disturbances of digestion are rarely absent, and are oftentimes so pronounced as to make them dominant and lead to a primary diagnosis of "chronic gastritis" or "gastric ulcer." They are not influenced by diet or even, as a rule, by fasting. They have no definite relation to the period of gastric digestion, and are only benefited by purgation, and then but for a while. The gastric analysis is likewise variable. In all, these stomach symptoms conform with what we to-day generally recognize as those of functional gastric disturbance, with the real disease elsewhere. In this connection it is well to quote from a recent address of Moynihan where he says, "In my own experience the commonest site of a 'gastric ulcer' is in the right iliac fossa, and I have no doubt that in the majority of the cases which form the basis of the text of the very careful and elaborate treatises by the physicians of all lands upon 'gastric ulcer' no morbid process of this kind was present."

7. **Loss of Weight and Tone.**—As the case progresses the patient begins to exhibit the usual signs of intestinal toxemia, with general impairment of nutrition and vitality. He begins to lose flesh quite perceptibly, and with the loss of weight is a corresponding loss of strength and tone. He becomes weak and lacking in ambition, the skin becomes mottled and discolored, the facial expression shows depression, and the general picture of intestinal auto-intoxication is complete.

8. **Neurasthenia.**—Finally, the patient becomes markedly neurasthenic and even melancholic. All symptoms are exaggerated, and it would take volumes to record their chronology of complaints. When our surgical efforts proved futile it was easy to fall back on the all-sufficient excuse, neurasthenia.

Differential Diagnosis.—We believe a diagnosis can almost always be correctly made by a careful study of the case under the analysis of the foregoing symptoms, particularly after one has once had the experience of even a few well-observed cases. Thus far we have found little difficulty in diagnosis through the analysis of the clinical symptoms and physical examination alone. In fact, we have

been able to arrive at a positive diagnosis in all well-matured cases on clinical evidence alone, and in no case in which such diagnosis had been made did we fail to find the membrane. It is, however, true that the membrane, in several instances, has been discovered in the course of abdominal work for other conditions where it had not been suspected. In none of such cases, however, was the membrane producing any mechanical interference with the free action of the colon. It is therefore apparently only productive of diagnostic signs when it has become a factor in the establishment of mechanical interference with intestinal peristalsis.

For additional evidence the use of the X-ray, following the ingestion of bismuth, has proved of considerable value, and has been well presented by Lane, Pilcher, and others. For the technic of this use of the bismuth meal we quote as follows from Pilcher:

“Technic of Bismuth Meal.—The bowels having been emptied during the day by a dose of castor oil, the patient is given, at ten o'clock in the evening, a mixture containing from two to four ounces of bismuth subcarbonate, the amount to be determined by the size and weight of the patient. To this are added six ounces of musilage of acacia, and the quantity thus obtained made up to sixteen ounces by top milk, which serves to disguise the insipid taste of the bismuth and the acid taste of the acacia. The patient then reports to the radiographer the following morning at nine o'clock, after an approximate interval of twelve hours, at the end of which time it will usually be found that most of the bismuth emulsion has passed the terminal ileum and has already filled the first part of the big gut. Subsequent exposures must be determined according to the degree to which the bismuth is found to have progressed along the bowel at the first examination. In many cases a supplementary enema of bismuth is administered through a short rectal tube. Observation shows that the emulsion is carried around to the cecum within four or five minutes by retrograde peristalsis. By combining the two methods a good demonstration of the entire intestine can be secured.”

The evidence furnished by skiagraphic work with bismuth are in general those of local stagnation in the ileocecal region, and particularly will demonstrate the dilated and oftentimes prolapsed cecum. Repeated pictures at intervals also demonstrate the retardation of the fecal current in the ileum, in the cecum, at the hepatic flexure, or anywhere that obstruction may occur.

With the rather broad distribution of symptoms resulting from membranous pericolicitis there may be quite a number of other conditions simulated and require differentiation.

1. Chronic Appendicitis.—The most common error has arisen in diagnosing this condition as chronic appendicitis, a mistake often made, indeed. It should be remembered, however, that the appendix, as a small localized organ, should give, when inflamed, rather correspondingly definite local signs. The tenderness of chronic appendicitis can, even by the patient himself as a rule, be focalized with the finger-tips, though the exact spot must vary with the anatomical site of the appendix in the individual case. In membranous perico-

litis, in marked contrast, the tenderness is diffuse, as the lesion, over practically the entire right side of the abdomen. It cannot be covered with the finger or even the hand, the patient, in endeavoring to signify the site of pain, passes his fingers from costal margin to Poupart's ligament. It is true that he will usually in time find spots of rather exaggerated tenderness, as at McBurney's point, due to the distention of cecum, and beneath the costal margin where is found the hepatic flexure as well as the gall-bladder. But these are not distinctly focal points of focal disease. An attack of acute appendicitis with diffuse peritonitis leaving behind extensive adhesions might produce similar signs of diffuse pain and tenderness, but in membranous pericolitis there is never any history of such antecedent acute appendicitis, no fever, no rigidity, no tumor, no prolonged acute bed illness. Furthermore, in the true chronic appendicitis the pain is in most instances referred to the epigastrium, and the local signs of appendicitis become well marked only when the inflammation is sufficiently acute to extend to the peritoneum. In membranous pericolitis the pain is always distinctly confined to the right side of the abdomen, and is never epigastric. There may be many stomach disturbances, but rarely gastric pain. This significance of epigastric pain in chronic appendicitis is indeed noteworthy. Stanton, in the analysis of end results in a traced series of one hundred cases operated upon for presumably chronic appendicitis, remarks, "in our cured cases of chronic appendicitis the pain has been almost constantly referred to the epigastric or mid-abdominal rather than to the right inguinal region. On the other hand, nearly all the patients not benefited by operation complained of right inguinal pain as one of the chief symptoms."

2. **Gall-bladder.**—The diagnosis of gall-bladder diseases has also been one of the sources of error. The marked angulation of the hepatic flexure and the pain occasioned as intestinal contents attempt to pass this point of narrowing suffice to explain the confusing symptoms. Of course, there is no jaundice and no true biliary colic. But even so these signs may be lacking in true gall-stone disease. But the one significant point is the absence of distinct localized exclusive pain or tenderness beneath the ninth costal margin, which should be distinctly focal in cholecystitis, but is diffuse in pericolitis; also, there is seldom transmitted subscapular pain in this condition.

3. **Gastric Ulcer.**—The diagnosis of gastric ulcer has also been made, and, indeed, often strongly claims one's attention, in view of the almost universal presence of digestive disturbances in these colonic disorders. In pericolitis, however, the gastric symptoms present no definite type, and have no special relationship to gastric function, either in time of occurrence or in character. They are only influenced by intestinal evacuation. The present-day conception of extrinsic gastric symptoms, and reference will readily protect the

careful analyst, with the presence of the other distinctive intestinal signs.

4. **Ovaries.**—In women the cecum distended and down low in the pelvis leads one to consider ovarian disease, and doubtless many ovaries have been taken out on such erroneous conclusions. Again, however, we must note the absence of focalizing limitation or association with menstrual function, and pelvic examination should clear remaining doubts.

5. **Chronic Colitis.**—The term colitis as used in the past has been so all-embracing as to cover every phase of large intestinal activity, and doubtless many cases of membranous pericolicitis have found refuge beneath its sheltering wing. A true colitis, however, should show more evidences of increased mucous secretion. Diarrhea, therefore, should be largely characteristic of colitis, with abundance of mucous in the stool most of the time. In membranous pericolicitis, **per contra**, diarrhea is absolutely rare, and mucous is only observed on close attention and then fixed to the fecal mass. In the opinion of some observers, colitis is a cause of the pericolic membrane. We rather incline to doubt this, but believe that, as the result of chronic retention and irritation in the gut restricted by the pericolic membrane, a colitis may occur as a secondary condition; and, furthermore, these cases have proved in our experience most resistant to treatment.

6. **Lane's Kink.**—The distinctly focal observation in the terminal ileum produced by the much-discussed Lane's kink may also be a source of confusion. When Lane's kink is found as a solitary lesion, however, the broad distribution of signs presented in membranous pericolicitis is lacking. In fact, Lane's kink more nearly simulates a true chronic appendicitis, as it is likewise a distinctly localized process. It is usually referred a little lower down and more toward the middle line than the appendix, but the X-ray may be required to differentiate. The Lane's kink may, however, be associated with membranous pericolicitis. When so associated it cannot be diagnosed in advance, but as a possible factor should always be looked for when operation is undertaken for the broader condition.

7. **Kidney Stone.**—Kidney lesions, and particularly calculus, may occasionally be suggested, though such has never occurred in our cases. The urinary analysis and the X-ray findings are sufficient to dispel any doubt.

One fact at least has been clearly demonstrated. In cases of any surgical doubt of diagnosis a sufficient exposure should be made to disclose the entire ascending colon, which should then be systematically explored. The small incision and the too hasty operation on too confident diagnoses have been factors which have led us into many distressing failures. If we progress no further from these studies of membranous pericolicitis than to enable us to avoid previous errors in

diagnosis and correspondingly fruitless surgical efforts we shall have gained much. With this more accurate study, however, as a basis, may we not look forward to ultimate surgical achievement in cure?

Treatment.—From what has been said as to the quite varied opinions expressed concerning the etiology of this condition, it might reasonably be inferred that the views of treatment would be equally divergent. And to one who has followed the rather extensive literature of the subject within the past year this variance becomes evident. And such is but to be expected in any new field of investigation. We are frank to confess that our own personal opinions are as yet undecided, and only with time and an honest and impersonal criticism of actual experiences can the true condition be obtained.

1. Non-surgical treatment.—We have, as before stated, observed this apparent membrane in several instances with relatively slight symptoms; and in these cases the membrane was evidently producing no mechanical interference with the gut activity. These observations lead us to believe that possibly some cases, particularly those in which an early diagnosis can be made, may be cured by proper treatment without resort to surgery. And particularly would this inference appear correct if we accept the view of a colitis or an over-absorption of irritant toxic or infective material in the colon as the beginning point of the disease. Upon this presumption the logical non-surgical treatment would involve: (1) the proper drainage of the large intestine and the removal thereby of causative factors; (2) the establishment of a correct dietary to eliminate factors of fermentation, putrefaction, and irritation; (3) methods for development of normal evacuant capacity of a gut whose muscular tone is impaired or interfered with—as by massage and exercise; (4) direct medication of the colon, mainly through colonic lavage, aided by varied possible specific medical agents; (5) external supports to correct malpositions and obviate the stasis of gravity.

Tyrodé of Boston reports a series of cases of clinical history analogous to those found in the early stages of this condition, which under systematic treatment along such lines were greatly relieved or cured. For details of such treatment we refer one interested to the complete description of Tyrodé. We are particularly inclined to emphasize the importance of efforts to restore normal muscular tonicity. Cathartics, while occasionally required, are in the end only a makeshift. Correct massage of the colon to aid evacuation of the gut and at the same time to restore muscle tone is of much value. Likewise we consider valuable exercises which bring into use the abdominal muscles and render them auxiliaries to those of the intestine. In fact, we are of the opinion that the sedentary habits of modern civilization, with the negative assistance of relaxed abdominal walls on a comfortable seat in the modern closet, are potent factors in the general tendency to constipation. The relatively weak involuntary

muscles of the intestinal wall were never intended to do the entire work in producing evacuation of the intestinal contents. The compressive action of the abdominal muscles must be brought to their aid, and therein lies an important element in any non-surgical treatment. Where the factor of ptosis is added, proper abdominal support, as emphasized by Franklin Martin, is obviously valuable, but should not be carried to such an extent as to interfere with the proper activity of the abdominal muscles. Hot-water flushing of the colon not only removes toxic material and products of putrefaction, but is furthermore stimulant to correct glandular secretion and intestinal motility. We have not considered added medication of these colon flushings as of much added value, as there is so seldom much mucous discharge in typical cases.

Surgical Treatment.—In our experience most cases have been treated for rather prolonged periods, oftentimes even for years, before surgical advice is requested. Such evidences would not lead to much enthusiasm for conservative treatment in the average case. In fact, most of our patients have progressively grown worse, even in the face of prolonged medical efforts. And, indeed, when one views the extensive pathological changes on the outer gut surface in typical cases, one could not well hope for any real curative results from any internal medication. When fully developed it is apparent to anyone who has seen a case that the cure must be mechanical and thus require some form of surgical intervention.

But here, likewise, we are confronted with considerable disagreement of surgical opinion in keeping with the divergence of pathological conception. In order to fully comprehend the situation it is well to view briefly these varied surgical procedures. Several of these procedures have been suggested for presumably quite different conditions, but, we believe, have covered conditions of membranous pericolicitis and add some information to the subject.

We have expressed the opinion that Mr. Lane has covered the same subject in large measure from a different viewpoint. Considering intestinal stasis in the colon as the starting-point of all trouble, Mr. Lane has directed his surgical efforts to the end of sidetracking the main portion of the colon and permitting a shorter and quicker outlet for intestinal waste. It is evident that in his opinion the individual would be better off without the colon altogether. His first efforts were directed, however, to a simple short-circuiting by ileocolostomy. From this he derived much benefit, but not complete satisfaction. The well-known fact of reverse peristalsis in the colon would still carry contents back into the segments which he desired to exclude. He then began the plan of supplementing the ileosigmoidostomy by excision of greater or less segments of the remaining colon, and a few years ago advocated the radical excision of the entire colon from the ileocecal juncture to the sigmoid. This radical

suggestion met with little acceptance elsewhere on account of its apparent magnitude. And now Mr. Lane has himself abandoned the plan on account of several instances of distressing after-effects and an excessive mortality, mainly from true adhesions. In his last communication he has returned to the simple ileo-sigmoidostomy, now supplementing it, however, by an effort to establish a new and artificial kink above his point of anastomosis to prevent reverse peristalsis carrying the feces back to the right colon. This method has not long been used, and his ultimate experience with it is yet conjectural. If it is successful in preventing reverse peristalsis, the question naturally arises, may we not pass from constipation to diarrhea, and, if so, where are we better off? With effective cut-off of reverse peristalsis, the further question of nutrition arises, with so large a part of our food products excluded from the absorption of the first portion of the colon, and, instead, rejected promptly from the anus. In all, the method of Mr. Lane has never appealed to us sufficiently to warrant our giving it a trial, though unquestionably some good and satisfactory results have been reported by Mr. Lane, and also by others who have followed his lead.

For a good many years cases of various types of chronic colitis have been treated by **cecostomy**, as recommended first by Gibson of New York, or by **appendicostomy**, a modification of Gibson's idea introduced by Wier, also of New York. Through a fistulous opening thus provided the gut could be directly treated by irrigation, supplemented with such local agencies as might be indicated. Many most satisfactory cures have been reported from such treatment. If the theory of Gerster as to the origin of the pericolic membrane from a primary chronic colitis is correct, then this might logically have a place here. In critical reviews of the results of cecostomy and appendicostomy, however, one is struck by the rather frequent occurrence of such remarks as this: "The patient was entirely relieved until the fistula was permitted to close, when the symptoms recurred"; or "the patient will not permit the fistula to close." Is it not highly probable that these cases of supposed chronic colitis were indeed ones of pericolitis instead? The vent which relieves tension could thus afford relief while maintained, but with the pericolic membrane still present, a recurrence of symptoms would be inevitable when the vent was closed. It is evident, hence, that a simple cecostomy would not cure membranous pericolitis. But if this operation were preceded by methods which would secure removal of the constricting or restricting membrane (the sequence of colitis, if this theory is correct) it might offer a logical method for curing the original colitis. While this procedure has never been adopted by us, largely alone because of the objectionable fistula, it may yet become a method worth serious consideration.

Viewing the dilated and mobile cecum as the fundamental cause

of the symptoms presenting, Wilms, years ago, suggested a **cecopexy** as the correct treatment. This operation was designed to fulfil two functions: (1) to elevate the prolapsed cecum out of the pelvis, and (2) to fix it so as to prevent kinking in peristalsis and likewise to relieve tug on bowel and appendix. This procedure has been utilized in quite a considerable number of cases by Wilms and others in Germany, with approximately seventy per cent. of cures. Wilms's method was to fix the cecum in a pocket of peritoneum made just about the brim of the pelvis, into which the lower end of the cecum was slipped. To this method, in women at least, objection has been made by the number of obstetricians on the ground that thus placed it would become the source of trouble in pregnancy from pressure of the uterus thereon, as well as by the limitation of upward lift of the cecum, which should take place as the uterus ascends. Others have suggested instead its fixation to the anterior parietal wall. Gregory Cornell, who has followed our suggestions of stripping off the investing pericolic membrane, has left this membrane attached to the cecum at its lower end, and twisting the membrane into a cord has brought it through the parietal wall as a ligament of suspension.

Other German surgeons, believing the dilatation rather than the mobility of the cecum to be the productive factor, have attempted to correct the condition by **plication** of the cecum instead, on the same principle which has prevailed in plication of other dilated organs, such as gastro-plication, for the stomach. This has really seemed more logical to us than the fixation method of Wilms, though, indeed, both might be combined.

If our view is correct, however, that the dilated cecum was a secondary matter, the result of long-continued distention resulting from the restriction of the pericolic membrane above, we would naturally expect the results of either of these methods alone to be transitory, and that with the cause remaining a recurrence of dilation would be inevitable. We would like, therefore, to know the remote results of such measures alone before accepting them as logical surgical procedures.

We are, however, inclined to consider some such procedure a valuable step in the mechanical relief of the obstructive effect of the pericolic membrane. When this is accomplished, the secondary dilation of the cecum should be attacked, for we believe it to be a distinct factor in the ultimate cure. We look upon the cecum in many respects as the initial propeller in the colonic circuit. With obstruction in front, the cecum becomes so stretched as to lose its tone and finally its function. Cannon has demonstrated that the colonic muscles in a normal condition of tonus respond to the presence of material within its lumen by the reaction of peristalsis. When, however, the tonus of the muscle is lost, as by overstretching, the peristaltic reflex disappears. The obstruction which produced the

dilatation should, hence, be first overcome. Otherwise, even though cecopexy or cecal plication for a while might be efficient in restoring normal tones, we would naturally expect, with the original factor still present, a recurrent dilatation with all its sequelae.

On the other hand, with the removal of the obstruction alone, we yet leave a dilated cecum with deficient primary propulsion of the fecal current. Hence this method alone will likewise sometimes fail. And such has been our experience. In our original operations we limited our surgical efforts to the removal of the constricting effect of the pericolic membrane which we attempted to remove entirely. In about 75 per cent of our efforts the result was entirely satisfactory, with complete relief. In a smaller percentage we secured benefit in part, and in a few cases no benefit whatsoever. The latter cases were usually of long standing, and the dilatation of the cecum was well marked, with considerable bloating and oftentimes with occasional diarrhea. Believing that the condition of the cecum was perhaps the cause of our failure here, and recalling the experiences of Wilms and his followers, who secured about the same percentage of cures from cecopexy or cecal plication alone, it occurred to us that our original efforts might be supplemented by this procedure with advantage. Of these two German methods, plication has seemed to us to be more logical. When properly done it secures a shorter length of muscle action, thereby restoring tonus and with it the initial peristalsis so necessary. This plication can be accomplished either by longitudinal reefing mattress sutures, usually one paralleling each longitudinal band, or by two or three series of transverse sutures turning in each a fold of about one-quarter inch depth. These sutures are planned to pick up the muscular coat as well as the serosa, and as material we have used linen. This combined procedure we have utilized now for nearly a year in about ten cases, and with apparently, thus far, perfect success.

One further word here may be spoken concerning the method of dealing with the obstructive membrane. Most of the surgeons who have given attention to this condition have contented themselves with simply dividing the bands at the points of particular fixation, stretching them apart and in some instances doing plastic suture to cover the resultant raw surfaces in some manner to prevent adhesions without at the same time restoring the constriction. And in general they have reported good results from this method. In our original communication we suggested the more complete removal of the entire membrane, which is easily accomplished. Of this method the theoretical objection was offered that it would leave large raw surfaces which might invite adhesions. On likewise theoretical grounds we assumed that the remaining covering of the supposed raw surface represented an epithelial lining of lymph space which could take the place of the normal peritoneum. Since our original

communication we have operated upon two cases in our clinic where other surgical conditions of the abdomen were known to coexist and were left for future operation in order to afford opportunity for observation of the effect of the colonic stripping. These two cases, when re-operated at the end of six months and one year respectively, showed no adhesions whatsoever, thus apparently justifying our theoretical assumption. The primary effort, however, is to relieve restriction, and the extent of dissection of the membrane should be governed by this necessity alone.

In some cases the angulation of the hepatic flexure is particularly marked, and the obstruction is found chiefly here. Likewise in these cases the pericolic membrane is particularly dense and extensive. In such cases particularly the suggestion of Hoffmeister is worth consideration. He has resorted to a lateral anastomosis between the ascending colon and the descending loop of the transverse colon, thus affording a new and satisfactory channel for the easy and complete emptying of the stagnant ascending colon and cecum. Where such an object appears desirable it has occurred to us that a method similar to that of Finney's pyloroplasty applied at the hepatic flexure would be particularly adaptable. Thus far, however, we have not had occasion to try it, but expect to when a suitable case presents.

In one instance at least, reported in our original communication, the membrane was a solid sheet of fibrous tissue perfectly opaque and entirely obscuring the the entire ascending colon and hepatic flexure, which could not be recognized at all until the membrane was divided and stripped away. Then we discovered a small contracted atrophied colon which we believed incapable of restored function. In this case we excised the entire ascending colon, including the hepatic flexure, and made an anastomosis between the ileum and transverse colon, thus entirely curing our patient. Occasionally it may be necessary to repeat such a procedure.

Finally, we are of the opinion that no one method will be found applicable to all cases, and that it is well to have in mind all the varied methods enumerated. A judicious surgical selection will give better results than any one method followed as routine. In the majority of cases the removal of the obstruction of the pericolic membrane, supplemented by a cecal plication, is our present method of choice. In more advanced cases some method of direct drainage, as by a plastic anastomosis at the hepatic flexure, will be preferable, and occasionally a more radical operation, as excision of the ascending colon, may become necessary.

In conclusion we desire to emphasize, as we did in our first article, that any surgical procedure must be followed by a vigorous after-treatment along general lines before indicated. Correction of diet, regulation of habits, muscular exercise, and abdominal massage,

with colonic lavage occasionally, should, be considered essential factors in restoring proper tone and function to an intestine long disabled.

Since completing the above article, a new method of short-circuiting the colon has been suggested by Frank C. Yeomans, of New York City, in the **American Journal of Surgery**, January, 1913. Yeomans makes an anastomosis between the cecum and sigmoid (cecosigmoidostomy). With the usual mobility of the sigmoid and the elongated cecum, an anastomosis of this type is easily effected, as judged by his experiences in three cases. This method appeals to us as superior to that of ileosigmoidostomy as it provides free drainage to both ends of the short circuited colon. Even should reverse peristalsis carry fecal contents back around into the cecum, it would again drain out through the anastomosis into the sigmoid and not invite recurrence of stasis in the cecum and ascending colon. Theoretically, we are much impressed with this technic if any short-circuiting is demanded.

INTUSSUSCEPTION WITH ATYPICAL SYMPTOMATOLOGY

A. L. WRIGHT, M. D. and O. C. MORRISON, M. D., Carroll, Iowa.

The interpretation of symptoms arising from pathology or perverted physiological function of intra-abdominal organs, impress those who try to interpret such symptoms on rules already laid down, as being far from accurate, and convinces us that we are never quite sure until after the abdomen is opened and even then oft-times the doubt still lingers.

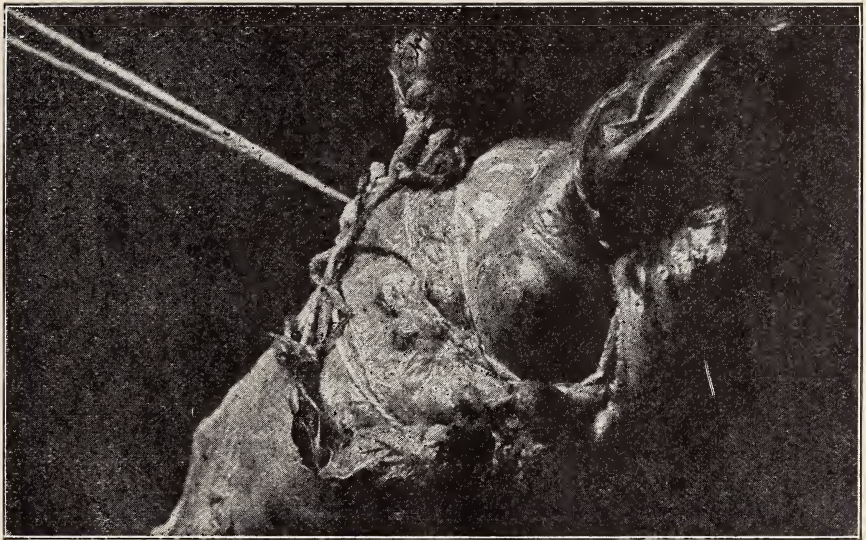
I well remember the remark of one of America's most illustrious surgeons. He was the greatest pathologist the country has known and loved to unravel hidden skeins in autopsy. He made this remark after a very trying abdominal operation. "I love to interpret symptoms, then operate to verify the symptoms, then follow the patient into the autopsy to verify the pathology".

Granting the patient the benefit of his good intention we also are often forced into autopsy because we are led astray on symptom interpretation.

The history of the following case will throw some light upon what is alluded to.

History:—Master Harry H. aged 5; German extraction; came to us complaining of a slight pain over McBurney's point. His family history was negative, also his past medical history. The present illness began on Jan. 5, 1912, by "stomach ache," which caused only a slight indisposition. He played all day but would occasionally stop and tell his father his "stomach ached". He

vomited at 5 o'clock P. M. slightly, had a headache and was put into bed, at which time I saw him. Temperature was 100 F., pulse 90, respiration 30. Pain on deep pressure was not marked over McBurney's point. Bowels had moved and he voided urine normally. A diagnosis of appendicitis was made with orders to withhold all foods and drinks by mouth. Patient rested well during the night, no anodyne required. He did not vomit. At 6 o'clock A. M. Jan. 6th, 1912 he had a bowel movement which contained two ounces of blood, I was again called. A mass could be felt in the cecal region which was hard and about the size of a clenched fist. There was no change in the constitutional symptoms, a diagnosis of a probable intussusception was made, and recommended that the patient be removed to the hospital where an exploratory incision would clear up the diagnosis and offer an avenue for speedy treat-



ment. The boy was admitted to the hospital at 9 o'clock P. M. Jan. 6, 1912. About 24 hours after initial "stomach ache" I saw him and made arrangements to open the abdomen the following morning.

His pulse, temperature, and respiration were about the same as when I first saw him. At 12 o'clock P. M. the nurse called, informing me the pulse had suddenly gone beyond counting, the respiration hurried, and shock very marked. I arrived at the hospital within 20 minutes but the child died 5 minutes after the nurse called.

I immediately did an autopsy. The appendix was moderately congested, showing appendicular trouble. The first 3 feet, 9 inches of ilium were intussuscepted into the cecum, causing complete obstruction of the ilium, with a marked distention of the gut, and had so cut off the blood supply that the bowel was purple and very friable, together with a marked sero-fibrinous effusion into the peri-

toneal cavity. The intussusception was removed and photographed. Opening the ilium was a pedunculated fibroma on a peduncle of 2 inches in length, three feet three inches from iliocecal valve, which was probably the cause of the trouble. Aside from the mass and hemorrhage, nothing unusual of obstruction was present.

It impresses me with the fact that the usual procrastination of the practitioner is very dangerous to the welfare of the patient. We are between two fires; that of criticism of removing the appendix for every belly ache on one hand, and that of being prejudiced against early operation. The physician who cannot operate and resorts to internal medicine in all cases, prejudices the laity against early operations. The surgeon who realizes the importance of early operative interference is considered a fanatic by both the conservative and the laity, and is accused oft-times of operating for the relief of the man's financial account against his normal appendix.

Experience and science both have proven to be safe, there is only one treatment; that is operate as soon as a diagnosis is established and conditions right. If all physicians talked science instead of his opinion, the laity would quickly and willingly acquiesce.

The most interesting part of this study of intussusception is the etiology.

1. W. W. Keen holds that it is due

(a) To difference of diameter of large and small bowel. At birth the colon and cecum are practically equal in diameter. At 3 years cecum is three times larger than ilium.

(b) The structure at this age of the valve being less complete.

(c) The mucosa of ilium being looser and more easily prolapsed.

(d) To length of iliac mesentery and its mobility.

2. Powers thought that the angle at which the ilium meets the cecum is responsible. He analyzes 40 cases; 60% were at an angle of 90°, 40% greater than 90°.

3. Loring's *Invagination Pericolica* is due to chronic inflammation of the cecum causing a rolling in of the ilio-cecal valve and a suction on ilium. Large meso-appendicular glands will also do the same thing.

4. Weis and Wagner favor especially sarcoma and carcinoma as causes of ilio-cecal intussusception.

5. Treves:—"Polypi may cause intussusception from intestinal peristalsis. Meckle's diverticulum may cause it."

6. O'Connor reports a case where a Meckle's diverticulum 22 cm. long sloughed through the cecum.

7. Golding Bird reports a case of a child 4 weeks old who pre-

sented an omphalitis with feces discharging. At autopsy an ilio-cecal intussusception had occurred and the appendix was protruding through the diverticulum.

8. Clubbe gives these statistics:

| Diagnosis | No. Cases | Cures | Deaths |
|-------------------|-----------|----------|----------|
| Ilio-cecal | 64 | 43 | 21 |
| Ilio-colic | 12 | 7 | 5 |
| Double form | 20 | 11 | 9 |
| | <hr/> 96 | <hr/> 61 | <hr/> 35 |

9. Wischman reports 724 cases of all kinds of bowel intussusception; 223 operatives—73 recoveries—150 death.

10. Leichtenstem reports 100 cases.

| | |
|-----------------------|-----|
| Ilio-cecal | 40% |
| Enteric | 30% |
| Colic and rectal..... | 18% |
| Ilio-colic | 8% |

(This corroborates Bintors and others.

In conclusion I would like to emphasize the fact that the better one familiarizes himself with abdominal diseases the less sure he is of his diagnosis and the more dependable he is on exploratory laparotomy to clear up the doubts.

Again, where we at least suspect serious complications is where we chagrin ourselves by trying to explain away blunders in diagnosis by the extreme rarity of the pathology involved. There are no hard and fast rules by which any abdominal troubles can be prognosed.

PARK HOSPITAL

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About four years ago, a number of Mason City physicians, seeing the need of an up-to-date hospital for the benefit of the public and physicians, conceived the idea of centralizing a hospital and office building in one, thereby solving the unusual economical problem of hospital deficits and bringing patient and physician in closer touch with each other in the hour of emergency and the minimizing of time.

With a few of the physicians heading the list, a stock company was formed and a suitable building, facing the city's central park, was constructed with the above ideas in view. The physicians organized themselves under Iowa laws into the Park Hospital Company, leased the building from the above stock company, used the upper floors for hospital purposes and the lower floors for offices, each physician being free to conduct his private practice as he saw fit and take out as much stock in the building company as he could afford, but each share alike in assessments and dividends in the hospital company.

The fact soon developed that each doctor felt he had almost his own individual or private hospital and had actual control over its management. As his patients entered the hospital, they felt almost akin to being an invited guest in the physician's own home.

The several physicians in the building had one office or desk girl in common, located near the main entrance, who saw every one that entered the building, answered any questions they might ask and directed them to the doctor they wished to see, and, by the aid of the local telephone exchange in the building, she would notify the doctor, by a code of rings if a patient entered his reception room. She answered all telephone calls coming into the hospital proper and, as each doctor had his private wire entering the building, if he left the building he had to pass her desk, so, by throwing a switch, all of his calls coming over his private wire came to her desk and she would take care of the calls for him just as though she were in his office.

Further, she posted books and sent out statements for the physicians, took dictation, etc. Each physician paid his small share toward her monthly salary.

A training school for nurses was established, being recognized by the state. Each physician, as well as the superintendent of the hospital, assisted in the training by giving lectures on the different branches required in the course.

The plan worked out so splendidly that soon the hospital became too small and, feeling the need of larger quarters, about three years later a new building company was formed and a new building site sought for. This was found on the corner of Sixth and Washington

Streets, diagonally across from the northwest corner of the City Park.

The site being purchased, plans were made by architects to construct a hospital modern in every respect, with the same arrangement as the former one. The contract was let, and the building was occupied the 5th of December, 1911.

The new building was named Park Hospital. It is a four story building constructed of brick and steel reinforced concrete and is fire proof throughout.

The first floor, which is the basement, is divided up into the furnace room, janitor's room, pathological and bacteriological laboratory, cooks and kitchen help room, main hospital kitchen, nurses



dining room, hospital laundry, refrigerator room, electric motor room for the Otis Automatic Elevator which operates from basement to fourth floor, elevator shaft, x-ray room, Turkish bath parlors, photographic room and store room.

The furnace room contains high and low pressure boilers, the former for the steam sterilizer on fourth floor, bath parlors, mangle on first floor, and the heating of hot water which is everywhere throughout the building; the latter, of low pressure boiler, for the steam heating system.

The laboratory is well equipped and has the distinction of being placed as an auxilliary laboratory, of the State Board of Health laboratory, for northern Iowa.

The kitchen, of course, is where all the food is prepared for the nurses, other help, and those patients that are able to handle general diet, the food for such patients being conveyed, by means of a dumb-waiter, from the main hospital kitchen to the diet kitchens located on third and fourth floors.

The laundry is equipped with a washer of forty sheet capacity, extractor, and steam heated mangle all motored by electricity, also a steam heated drying room. Electric irons are used for nurses' uniforms.

X-ray room is equipped with a sixteen inch coil. The Turkish bath parlors occupy the front end of the building and are reached through the main entrance. They are equipped with steel lockers for clothing, steam heated hot room, steam heated sweat cabinet, shower and tub baths, hot pack facilities, massage room and rest room, and is operated by a competent masseuer, open day and night.

The second floor consists of physician's offices, a dentist's office and a main office located near the entrance, consisting of a partial enclosure and occupied by the chief clerk who, along with the various duties as above described, also looks after the nurse's registry which is operated for the benefit of outside physicians.

The third and fourth floors constitute the hospital proper and are reached by a wide stairway and the automatic Otis elevator which is a fine feature of the building.

The third floor is divided into private rooms, some containing two beds, obstetrical room, small sun or rest room, chart room, diet kitchen, utensil room, bath rooms, superintendent's office, and two rooms containing barred windows for emergency cases such as acute insanity, etc.

The fourth, or top floor, is arranged in private rooms, some of which contain two beds. Some have private bath and private telephone service. On this floor, is the surgeon's general operating room and the pus operating room, between which is the physician's wash room and sterilizing room. No case is taken into the main operating room if pus is certain. Across the hall is the anesthetizing room, and running the full width at the rear of the building, on this floor, is a large sun room for pneumonia cases, acute intestinal cases or anything that requires an abundance of oxygen or both. To one side and shut off from the main corridors by double doors, is the obstetrical side.

The nurses in training receive personal instruction in class work as well as practical work from the hospital staff which consists of Dr. A. C. Echternacht, Dr. M. J. Fitzpatrick, Dr. W. E. Long, Dr. F. G. Murphy, Dr. L. E. Newcomer, Dr. C. F. Starr, Dr. C. M. Swale, and Miss Effie L. Moore, R. N., Supt. They give a three year's course and have power to issue diplomas to those who have satisfactorily completed the work. The first graduating exercises were held Jan. 8, 1913.

THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

EDITORIAL

Socialism in the Practice of Medicine.

How far Socialism will enter into the practice of medicine cannot now be determined, although it has become an established fact in England and Germany. The difference in governmental ideas in America as compared with those of many European countries, may postpone serious governmental interference for many years, but we are changing so rapidly in our notions of the functions of the government of states and of the nation, that we cannot be sure of what is in store for us. In England the opposition of the profession for some time bid fair to prevent the Government medical benefit being put into force, but it so happened in certain areas for one reason or another that the profession gave in and accepted the Government proposition with some modifications. The amended offer is only a slight addition to the original per capita payment. It is estimated that the payment will amount to about \$2,450 for every 1000 persons treated.

It appears that for many years medical benefits in Great Britain have been distributed through "Friendly Society Control", which the profession has strongly opposed. Now the Government takes a hand in the matter and proposes to force the profession to accept a scheme if anything more objectionable than the friendly society control. The alternative policy of the British Medical Association is to go to the approved societies and arrange an insurance which would give a "better service than that of the Government and free from the hampering regulations of the Government service. The approved societies would do the administrative work, the doctors on their side would guarantee an efficient medical service under the sole control of the Local Medical Committees", and that the funds would be used to pay the doctors in a certain area, fees agreed upon, and accord the insured person the free right to arrange with any doctor within the accepted service to attend him during the continuance of the scheme. The Government refuses to accept this arrangement and threatens to close the "panels" to the dissenting doctors, and contends that in most parts of Great Britain they have enough or nearly enough doctors on the panel to put the scheme in operation. Of course a good deal of uneasiness is felt on the part of the profession who have found their patients largely among those eligible to the government medical benefits. That part of the profession whose patients belong to the wealthier class are less interested in the struggle.

There is another feature that is liable to arise under the Nation-

al Insurance act, viz. contract fees paid by societies whose membership is made up of persons who receive an annual income which places them outside of the government medical benefits, i. e. persons who receive an annual income of more than \$800.00. If the Government pays more than \$1.50 per annum, the Provident Associations do not see why they should pay from \$2.25 to \$2.62 per annum.

The future of the medical profession in Great Britain may be said to be very problematic. Some of our own lay journals seem to see in this English plan so much that is admirable that we may expect to find our own Government seriously considering in its rapidly extending paternalism, some plan to lessen the burden of sickness to our laboring classes with its consequent influence upon those receiving relatively large incomes with the effect of reducing our incomes considering our much larger number of doctors at least one half.

Forcible Care of Certain Consumptives.

There is a certain class of consumptives who are exceedingly dangerous to the community because of inability or incompetency to properly protect the community against infection. Experience has proven that even in well regulated cases where the people are moderately well situated, intelligent and anxious to protect their friends, that the danger is minimized but now it is well known that there is no possibility of absolute safety unless the patient is properly cared for in an institution provided for that purpose.

However, I am not dealing with this latter class but contend that the ignorant, irresponsible or vicious consumptive should be forcibly detained in a sanatorium or retreat provided for that purpose. I know of instances in Iowa, and they can be multiplied in many doctors' experiences, of persons who absolutely refused or indifferently cooperated in protecting other members of the community against infection.

I know of a man who was dying of pulmonary tuberculosis, surrounded by a family of young children, and who when instructed by the attending physician to be very careful not to infect the members of his family, replied with an oath that they could take care of themselves, and insisted on expectorating into the open hearth and around in his yard, the result being that before his own death he had infected his wife and two of his children.

In cases of this kind the duty of society is obvious as I view it—to forcibly isolate this class of consumptives in institutions where humane treatment can be given them. In New York the slogan is, "No uncared for consumptives in 1915," and to bring this to pass a number of laws have been passed, among which is one to make provision for this class of consumptives.

In New Jersey a county hospital law has been enacted which also embodies a provision by which the class of consumptives above

referred to may be forcibly segregated. It further provides that in institutions for this special purpose, should a consumptive be incorrigible he may be placed in "solitary" and forcibly detained. We are coming to recognize that this dangerously infectious disease in its ultimate control and eradication must colonize the dangerous class.

Iowa and the Need of Crippled Children for State Care.

In every community there are a large number of crippled children who because proper care is not provided for them are unable to take a useful part in activity or work of any kind. The crippled child who is not able to get about easily is denied the privileges of the public school and grows up in comparative ignorance unless the parents are able to make exceptional provision.

The deformities responsible for the crippled condition are often not acute and so do not receive the hospital treatment they deserve. Furthermore the term of treatment generally lasts over a long period such as the average institution is not able to provide it in view of the other acute demands made upon it.

Orthopedics is a specialized branch of surgery and adequate attention can generally be secured only in the larger centers of population. Thus patients living in the country or in small places are often likely to go unattended or at least to have their deformity so develop that it is no longer susceptible to effective treatment and care. To gain the best results cases should be taken in hand early when the chances of recovery are infinitely greater.

Other classes of the handicapped are fairly well provided for in most communities. The blind, the deaf, the mentally defectives—for all these there are institutions adequate, or nearly adequate, to the needs. But up to the present time the needs of the crippled child have not been properly provided for. From the economic standpoint only the provision of proper care is expedient because in many cases complete cures can be effected and in others the children can be furnished such primary and industrial educational facilities as will enable them to become useful and self-supporting members of the community. Without the provision referred to a great many would be helpless dependents for life.

It is interesting to note that several states of this country have made legislative provision for crippled children and established institutions where they could be given both surgical and educational advantages. In this work the United States occupies a unique position. The first state to take such action was Minnesota which in 1897 established a hospital and home for crippled children. The State of New York followed the example and established the New York State Hospital for the Care of Crippled and Deformed Children in 1900. Massachusetts started a similar institution, the Mass-

achusetts Hospital School, in 1906 and several other states have taken some action in behalf of their cripples. The results of these institutions have been excellent. There have been found a large number of crippled children in each of the states named who were in need of the care provided and who have since profited by it.

It is important that this system of care should be extended to other localities. As yet the State of Iowa has taken no such action and I venture to suggest to the physicians of that state the desirability of such a move. Such an institution would offer the advantages an average hospital would be unable to provide and would obviate the neglect of education so often coincident with protracted treatment. The service which could be rendered by a state hospital school would be valuable and it would prove indispensable to the physicians interested in the welfare of this class of handicapped children.

Douglas C. McMurtrie, New York.

A Fallacy Exposed.

While squill, a member of the digitalis group of drugs, has been used chiefly for its emetic action, this same effect when produced by digitalis is an unwelcome phenomenon because this drug is used solely for the cardiac effects. Though without good evidence, it has generally been assumed that the gastric disturbances are caused by some principles other than those which produce the cardiac effects and many attempts have been made to produce preparations of digitalis which lacked the "side-action" of ordinary digitalis. As a result the various digitalis principles, in more or less pure form, were tried—and found wanting. Then various "dialysates" and "fat-free" preparations were put out, without gaining lasting favor. Still other preparations have been put out which were to avoid the gastric disturbances by being administered intramuscularly or intravenously. That all of these attempts were doomed to failure has been shown by the experimental work of Hatcher and Eggleston. Some time ago Hatcher (*Am. Jour. Physiol.*, 1909, XXIII, 310) demonstrated that the intravenous administration of digitalis was just as likely to produce gastric disturbances and hence he suggested that these effects were probably due to central effects of the medulla. New Hatcher and Eggleston (*Jour. Pharmacol. and Exper. Therap.*, 1912, iv, 113) by experiments on eviscerated animals have shown conclusively, it would seem, that the emetic action of digitalis, like that of squill, is a property of digitalis bodies in general and that it is due to their action on the vomiting center of the brain.

One of the lessons taught by the work of Hatcher and Eggleston is that the intravenous administration of digitalis does not spare the stomach and that vomiting is really a valuable warning sign showing the beginning of a toxic action.

Fat Metabolism of Lipomas.

Dr. H. Gideon Wells in a paper published in the Archives of Internal Medicine for Oct. 1, 1912, discusses the question of the influence of loss of fats to the system upon fats of lipomas. Pathologists have generally held that the fats of lipomas are not available to the host as a source of reserve food supply, and specific instances seem to show that this contention is correct. The number of observations however is too small to establish the fact of lipomas being influenced by the emaciation of a host. Shattock has observed this. Campbell (British Medical Journal) reports a fatty tumor that increased in size during the progress of emaciation. Adami noticed a large retroperitoneal lipoma grow and enlarge at the expense of the rest of the body. Wells after considering evidence of this kind states "Since normal tissues do not ordinarily store fat for their own use but for the use of the entire organism, this holding of fat by tumor cells when the rest of the body needs it is certainly out of harmony with normal fat metabolism and challenges explanation, "It is indeed difficult to understand how the fat of a lipoma can exist as it does in intimate relation to the blood vessels and not be utilized when the host needs fat. We know of no anatomic peculiarity that can explain such anomalous deportment on the part of the fatty areolar tissue of lipomas". Attention is called to the comparable normal localized fat deposits, for example, the hump of dromedaries, the fat tailed sheep, the fatty masses of Hottentots, etc., being drawn upon when needed for nutriment. For theoretical purposes, Wells assumes that there may be a chemical difference between the lipoma fat and the fat of normal local deposits, or there is a deficiency of abnormality of the enzymes of fat metabolism in the connective tissue. For the purpose of settling these questions a series of experimental investigations were made. The results of these experiments seemed to show that there was no chemical or metabolic difference between the facts of lipomas and the fats of normal depots of fat deposits.

Wells therefore concludes that as the clinical evidence is conflicting, more complete observation of cases should be made "that no reliable method could be devised which would indicate whether lipomas and normal fat tissues differ in their quantitative action on fats and esters." Wells further states that "lipoma fat is hydrolyzed by pancreatic lipase as readily as is normal human adipose tissue.

Radium and Thorium Therapy.

Carl Von Noorden formulates certain contraindications to radioactive therapy which have been tested out in his own clinic in Vienna. These are conditions of cardiac weakness of every kind, neuroses of the vegetative nervous system, especially the sympa-

thetic, and severe neurasthenia. It should not be used in Basedow's disease, diabetes, or in febrile conditions. It is positively harmful when there is a tendency to hemorrhage of any kind, especially menorrhagias, metrorrhagias, hemoptysis, hemorrhagic diathesis, and hemophylia, as well as in far advanced affections of the erythroblastic and the leucoblastic systems, in contrast to early stages which are favorably affected by this treatment. It is contraindicated in cachexias of every kind and has a pronounced unfavorable influence on cancerous cachexia, and in senile marasmus, in contrast to the beginning phenomena of old age, which are benefited by this treatment. The writer concludes that the weak emanatoria are harmless and often a mere therapeutic byplay. With the stronger radioactive methods, however, the greatest precaution is necessary, for they are as potent for good or evil, for healing or danger, as are the strongest alkaloids. (Medical Record January 18, 1913.)

Doctors and Health.

It is consoling to believe that the physician who recently addressed the Medico-Surgical Society of New York, urging his fellow workers to quick and decisive action to save the practice of the medical profession, is an exception and not the rule among doctors. He protested that the medical profession will soon be in a bad way owing to the activities of charitable organizations, the progress of sanitary science and the rapid extermination of chronic disease. He said that the income of the general practitioner was being cut down, and that if something was not done soon it would be too late.

The general public could hardly be expected to sympathize with this point of view, and it is undoubtedly true that the majority of doctors themselves would be perfectly willing to seek some other method of earning a living if the time came when their services were not needed on account of the improved condition of the health of the human race. The most efficient members of the profession have usually labored to bring about the very condition that would mean the destruction of their own commercial interests in the way of a remunerative practice.

So the contention that scientific progress and charitable treatment and the growth of general sanitation and healthfulness are destroying the doctor's jobs and so ought to be eliminated is a policy that will probably meet with little support from the men who are most influential in the medical profession. The probability that free dental treatment will soon be given to New York school children is a current evidence of the opposite attitude of general sentiment and action.—The Register and leader. Apr. 2, 1913.

Notable Features On the Program of Hygiene Congress.

The Fourth International Congress on School Hygiene, and the first to be held in America, at Buffalo August 25-30th, according to

an announcement of the executive committee, will be by far the most elaborate effort yet made in this country toward getting the problem of school hygiene before the world. The first International Congress was held at Nuremberg in 1904, the second at London in 1907, the third at Paris in 1910.

The objects of the Buffalo Congress are:

(1) To bring together men and women interested in the health of school children.

(2) To organize a program of papers and discussions covering the field of school hygiene.

(3) To assemble a school exhibit representing the best that is being done in school hygiene.

(4) To secure a commercial exhibit of practical and educational value to school people.

(5) To publish the proceedings of this Congress and distribute them to each member.

In addition there is a plan on foot to effect a permanent organization for the purpose of carrying out school hygiene reforms in all the individual communities in this country, if not all over the world.

One of the interesting features of the Congress will be the presence of delegates representing the community interest in school hygiene, including those appointed by mayors and governors, by women's clubs, by school boards, boards of health, by mothers' congresses and charity organization societies and boards of trade. Their help is being solicited with a view of organizing the community in a campaign of school hygiene reform.

The program committee announces a program of two hundred fifty papers and fifteen symposiums, taking up hygiene from the following points of view:

I. The hygiene of school buildings, grounds material and upkeep.

II. The hygiene of school administration and schedule.

III. Medical, hygienic, and sanitary supervision in schools.

The contributors to the program make up a notable list of speakers, college presidents and professors; state, city and county commissioners of education; teachers and superintendents of public schools, medical college professors; state, county and city health officers; physicians in private practice, engineers and architects.

Special discussions are being arranged on the following subjects:

School Feeding: arranged by the Committee on School Feeding of the American Home Economics Society.

Oral Hygiene: arranged by National Mouth Hygiene Association.

Sex Hygiene: arranged by the American Federation of Sex Hygiene.

Conservation of Vision In School Children: arranged by the Society for the Prevention of Blindness.

Health Supervision Of University Students: arranged by Dr. Mazyck P. Ravenel, University of Wisconsin.

School Illumination: arranged by the Society of Illuminating Engineers.

Relation Between Physical Education And School Hygiene: arranged by the American Physical Education Association.

Tuberculosis Among School Children: arranged by the Society For the Prevention of Tuberculosis.

Physical Education And College Hygiene: arranged by the Society of Directors of Physical Education in Colleges.

The Binet-Simon Test: arranged by Professor Terman, Stanford University.

The Mentally Defective Child: arranged by Dr. Henry H. Goddard, Vineland, N. J.

Various citizens committees of Buffalo are arranging an elaborate entertainment for the benefit of visiting delegates. There will be receptions and a grand ball, a pageant of school children, and excursion trips to the great industrial plants of Buffalo, and to the scenic wonders of Niagara Falls. The Boy Scouts will act as official guides.

Delegates will attend from every college and university of note in this country, from other leading educational and hygienic institutions and organizations, and from every country in which an active interest is being shown in the welfare of school children, which includes all the leading nations of the world.

The Congress is open to all persons interested in school hygiene upon the payment of a fee of five dollars. Application of membership should be sent to Dr. Thomas A. Storey, College of the City of New York, New York City.

President Wilson has accepted the honorary office of patron of the Congress. The president of the Congress is Mr. Charles W. Eliot of Harvard University. The vice-presidents are Dr. William H. Welch, of John Hopkins University, and Dr. Henry P. Walcott, president of the recent International Congress on School Hygiene and Demography, and chairman of the Massachusetts State Board of Health.

Gifts for University of California Hospital.

Report from Berkeley, Cal., on Jan. 5, states that gifts of \$400,000 are now assured for the University of California, to build and equip new departments of the University Hospital in San Francisco.

Minneapolis Meeting of the American Medical Association.

This may be regarded as among the first in interest and in the practical and scientific value of the papers read before the sections. Our own observations were confined almost entirely to the section on general surgery, but was told that the other sections did not fall behind in interest. The auditoriums where the sections on surgery and abdominal surgery were held were on Wednesday extremely hot and uncomfortable, but this could not be avoided on account of the weather and the great gathering of members. The section conducted the section work with commendable skill.

To a little body of men known as the House of Delegates, the "scrapping" of the association is delegated. Of all the offices in this organization, that of delegate is the least desirable unless it be that of trustee. About 40,000 doctors feel it their duty to abuse these gentlemen to the fullest degree from the beginning to the end of the year for the things that do go wrong and the things that do not go wrong in about equal measure. It requires men of courage to fill the office of delegate, not only courage but knowledge and experience. The states that have influence and gain recognition are the ones which carefully select their delegates and re-elect them year after year. The election should not be regarded as a personal honor conferred, but an onerous duty demanded by the state whose servant the delegate becomes. The state that does not care to have a voice in national medical affairs should constantly send new men to enjoy the honor of wearing a delegate's badge. Applying this to Iowa, we have now found the men we want, and they should be continued in office as long as they are willing to serve, unless it shall be found that they do not fairly represent us. Our delegates were well received and recognized. The business of our association is extremely complicated and a full knowledge of it must creep in slowly.

The total registration was 3254, of which number Iowa furnished about 300.

The arrangements for the care and entertainment of this great body of physicians and their families was entirely satisfactory and no "kicking" was heard. There was no overcharging by the hotels or want of courtesy in the treatment of guests. The quick lunches at the University at the noon hour were an interesting and commendable feature of the meeting and contributed much to the expedition of the business of the sections.

It should be said in conclusion that the House of Delegates promptly disposed of all disquieting matters that threatened to disturb the harmony of the meeting. For years things find their way into the House that threaten discord but have thus far been turned away quietly so as to be scarcely heard of. We trust that the several

states will have the wisdom to send trained delegates who will know how to deal successfully with these troublesome matters.

The officers elected were fairly representative men. The election of Prof. V. C. Vaughn of the University of Michigan as president-elect, will certainly meet with general approval.

History of the Illinois Society.

As Part II of the May Issue of the Illinois Medical Journal, the Council of the Society, through its chairman, Dr. Carl Black, with the assistance of Drs. Geo. Kreider, J. F. Percy and J. H. Stealy, has issued a most complete and comprehensive history of the Society from its organization in 1850 to the year 1898 (the year of the first issuance of the Journal.)

The history comprises a record of all physicians who were members between 1850 and 1898, a record of their attendance at the annual meeting, participation in the program, service as officers, delegates, or on committees. A double page photograph of the members at the Peoria meeting of 1871, a four page map of state, and photographs of many of the more active men embellish the book. It is a most valuable history of this organization, one that has required an enormous amount of work to arrange, and something that will be greatly appreciated.

Appropriation for the Health Department of Boston.

The total appropriation for the year 1913 which has been asked for by the city Health Department is \$4,581,666, a figure, which represents an increase of 42 per cent. over the appropriation granted in 1912. The largest increases requested are the following: For hospitals, \$389,653; Division of Child Hygiene, \$206,440; Otisville tuberculosis sanatorium, \$140,185; milk inspection, \$123,555; Division of Communicable Diseases, \$106,746; Division of Contagious Diseases, \$89,761; general administration, \$78,846; food inspection, \$76,875; laboratories, \$61,380.—From The Boston Medical and Surgical Journal.

Statue of Joseph Priestley.

A statue of Joseph Priestley, erected by public subscription, has been recently unveiled in Birstall, Yorkshire, England, where he was born 1733. His discovery of oxygen and other gases revolutionized the science of chemistry. It was he who discovered the properties of nitrous oxide, though it remained for Sir Humphrey Davy first to suggest its use as a surgical anesthetic.—The Boston Medical and Surgical Journal.

(Our Dr. James Taggart Priestley of Des Moines is a descendant of Joseph Priestley). Editor.

The Advertising Pages.

We are publishing a letter printed in the Wisconsin Medical Journal which all our members should read. It goes without saying that the cost of our Journal to the Society will depend on the success of our advertising pages. It therefore follows that every member of the Society should feel it a duty incumbent on him to encourage clean and legitimate advertising. The writer is in the advertising business and tells us how the business world looks upon this matter. If the advertiser becomes convinced that no results come to him, he very naturally withdraws his advertisement. We can assure the members of the State Medical Society that we will not take anything that investigation shows is not ethical, and we urgently request that the advertising pages be carefully examined and that we give our patrons a preference when we can consistently do so.

“While the very opposite should be the case, it is nevertheless a fact that the officially owned state journals are not considered by the advertisers as good advertising mediums; there seems to be an impression that the members of the state societies pay little attention to the advertising pages of the state journal. Of course there are exceptions.

“Now it seems to me that where a journal is owned and controlled by a society, and published exclusively in the society’s interest, some effort should be made to induce members to read the advertisements—especially since the state journals are, as a rule, very particular as to the advertising they accept—and to let the advertiser know that their announcements are being read.”

Kansas Board Of Chiropractors.

The medical profession of Kansas unitedly opposed the nomination and election of Mr. Capper for Governor, the Republican nominee, and was a factor in his defeat at the general elections following his nomination, but it seems that they jumped from the frying pan into the fire, from the sublime to the ridiculous; they elected a Governor who it is said recently approved a bill making a law creating a Board of Chiropractors; the Board to consist of three Chiropractors, one preacher and one school teacher.

Just what they expect to get out of this conglomerate mass is uncertain, but the medical profession of Kansas need not worry so much over the situation; it occurs to us that every time you give publicity to one of these alleged sciences you give it a death blow, the people of course have to pay the cost of this inefficiency turned loose among them, not the doctors.—(Journal of the Oklahoma State Medical Association, April 1913.)

STATE SOCIETY IOWA MEDICAL WOMEN

Minutes of the 16th Annual Meeting held at Des Moines May 6, 1913.

(Morning Session.)

The society met in the parlors of the Chamberlain Hotel and was called to order at 9:30 A. M. by the President, Dr. Georgia Stewart of Des Moines.

The reports of the district committees were given. Dr. Pauline Leader of Clarinda, reported for southwestern Iowa; Dr. Bertha McDavitt of Burlington, for southeastern Iowa; Dr. Lily Kinnier of Dubuque, for northeastern Iowa, and Dr. Agnes Eichelberger for northwestern Iowa.

On motion, these reports were adopted. It was moved by Dr. Grace Jerger, Waterloo, and seconded by Dr. Jean Mendenhall, Des Moines, that all district reports be sent in typewritten form. Carried.

The Credential Committee reported the names of Dr. Mildred E. Scheetz, Iowa City, Dr. Margaret Armstrong, Des Moines, Dr. Martha Welpton, Des Moines, Dr. Harriet Bottsford Amy, Decorah, as eligible for membership. On motion the report was accepted and the ladies received into membership.

Dr. Margaret Clark of Waterloo reported our relationship to the State Federation of Womens' Clubs. Report was adopted. The regular program of the day was then taken up. Dr. Tarana Dulin, Sigourney, read a paper entitled, "Practical Points on Blood Pressure." This paper was discussed by Drs. Whitmore, Throckmorton, Mendenhall, Jerger, McLean and Fosnes. The next number was a round table discussion opened by Dr. Lenna Means, Des Moines. Nearly every member present took part in the discussion. It was a very practical and helpful number. "When the Blind See" a paper by Dr. Mary Heard, Iowa City. This paper recounted the experiences of a girl who was blind till the age of twenty-five and then regained her sight. The paper was unique in its kind and as interesting as a fairy tale, but at the same time full of practical suggestions for the medical profession.

1:30—Afternoon Session.

Invocation by Mrs. Mitchell.

The Address of Welcome was given by Mrs. Homer Miller, President of the State Federation of Clubs, and responded to by Dr. Kate Harple of Boone. Dr. Georgia Stewart, Des Moines, gave the President's Address. It was a masterly paper and made a strong plea for a broader and nobler life and education for women. The Vice President, Florence Sherbon, Colfax, appointed Dr. Kate Hogle, Dr. Laura Branson, Dr. Margaret Clark, a committee to report upon this address. Dr. Margaret Clark next presented the subject of "Social Hygiene." Discussed by Drs. Scott, Coleman, Smith, Peo, Harple, Fosnes, Branson and Cronk.

Dr. Stewart then presented as guest of honor, Dr. Mary H. McLean of St. Louis, who presented a paper entitled "A Contribution to the Study of Fibroid Tumors". On motion of Dr. Whitmore, a rising vote of thanks was extended to Dr. Mary McLean for her interesting paper. Drs. Fosnes, Scott and Whitmore, discussed the paper.

Dr. Mary Lawson Neff of Brooklyn, gave an interesting talk on her work in the East.

Report of the Committee on President's Address. Dr. Hogle as Chairman of the Committee said: "In submitting this report on the President's Address, the Committee feels that the society is to be congratulated on the general excellence of the address and the able manner in which the facts, bearing on the relation of young girls and women in the industrial world today, have been presented.

The importance of a change in the council as being conducive to better work for our society is particularly to be recommended. The relation of women physicians to the world of women and their work, and the share women physicians should take in the education of women, is in keeping with the general movement of evolution in all lines and is to be favorably recommended.

We heartily commend the many practical suggestions throughout this paper and it is moved that the address be published with the other papers of the session.

Signed—Dr. Kate Mason Hogle, Dr. Laura Branson, Dr. Margaret Clark.

The Committee on Publication reported that the Journal of the Iowa State Medical Society was willing to publish the papers of the State Society of Iowa Medical Women.

Moved and carried that the papers of our society be given to the Journal of the Iowa State Medical Society for publication.

An auditing committee consisting of Drs. Peo, Harple and Dulin was appointed.

A recess was then declared and all members had the pleasure of an auto ride and a delightful reception at the home of Mrs. Waterbury.

Banquet at 8 P. M.

A business meeting was now called by Pres. Dr. Georgia Stewart.

Moved and carried that the Woman's Medical Journal be sent to all women of Iowa in foreign fields doing medical missionary work.

Financial Report.

| Printing. | | Receipts. | |
|-----------------------------|----------|---------------------------|----------|
| State Federation Dues..... | \$11.00. | Cash on hand. | \$22.58. |
| President's Expenses. | 4.40. | District Committees. | .75 |
| Treasurer's Expenses. | 10.00. | For Book. | 5.00. |
| Secretary's Expenses. | 3.82. | Dues old members. | 40.00. |
| Programs. | 4.75. | Dues New members. | 4.00. |
| Book sent to Missionary... | 5.00. | Delinquent members. | 5.00. |
| Expense of Speaker of day.. | 5.00. | | |
| | 24.25. | | |
| | | | \$77.33. |
| | \$68.22. | | |
| | | Balance. | \$ 9.11. |

Election of Officers.

President—..... Dr. Florence Sherbon.

First Vice President—.....Dr. Jeannette Throckmorton.

Second Vice President—..... Dr. Tarana Dulin.

Secretary—..... Dr. Clara B. Whitmore.

Treasurer—..... Dr. Grace Jerger.

Auditing Committee reported that the books were balanced and all accounts in proper condition.

The following delegates and alternates to the State Federation at Cedar Rapids were elected: Drs. Stewart, Hogle, and Branson, delegates; Drs. Clark and Whitmore alternates.

The following resolutions were adopted by the meeting.

Resolution I.

In view of the marked advance of the Womens' Suffrage Movement in our own and other states, it seems right that an equal suffrage amendment to our state constitution should be submitted to the voters of Iowa. We, therefore as members of the State Society Iowa Medical Women, approve

the bill passed by the last legislature and ask that the same bill be passed by the legislature of 1915.

Resolution II.

Resolved:—That the State Society of Iowa Medical Women heartily approve and offer their co-operation in the work of the American Baby Health Contest Association which was incorporated April second, 1913, and has begun the splendid work of encouraging the rearing of healthy children.

By motion Dr. Edith Gould Fosnes was made an honorary member of the State Society Iowa Medical Women.

Adjournment.

The Sixteenth Annual Banquet of the State Society of Iowa Medical Women was held at Hotel Chamberlain Des Moines, May 6th, 1913.

Dr. Laura H. Branson, Iowa City, Toastmaster.

Toasts were given and responded to as follows:

1. Medical Fads:—Dr. Jennie Ghryst, Ames.
2. Votes for Women:—Dr. Florence Sherbon, Colfax.
3. Better Babies:—Dr. Lenna Means, Des Moines.
4. Medical Miscellany:—General.
5. The Doctor's Reward:—Dr. Kate Mason Hogle, Mt. Vernon.
6. Our Guests:—Mrs. W. F. Mitchell, Des Moines, Mrs. Chas. B. Van Slyke, Des Moines, Dr. Mary McLean, St. Louis.
7. The Swan Song:—Dr. Georgia Stewart, Des Moines, the retiring president.

Other Guests present:—Mrs. Frank Waterbury, Mrs. Cokenower, and Mrs. J. C. Grundy, all of Des Moines.

IOWA STATE MEDICAL SOCIETY

1913

Minutes of the Sixty-Second Annual Meeting, held at Des Moines, May 7, 8, 9, 1913.

May 7—First Day—Morning Session.

The Society met at the Auditorium and was called to order at 9 o'clock a. m. by the President, Dr. V. L. Treynor, of Council Bluffs.

The divine blessing was invoked by the Rev. Everett Dean Martin, of Des Moines.

The Address of Welcome was delivered by Senator Lafayette Young, of Des Moines.

Dr. A. M. Pond, of Dubuque, responded to the Address of Welcome.

Dr. Thos. F. Duhigg, Chairman of the Committee on Arrangements, made an announcement of the entertainments, following which he, in well chosen words, presented to the President a gavel, admonishing him to use it if any member read a paper of more than 20 minutes length. With an expression of a high sense of appreciation the President acknowledged the gift.

The reading of papers was then taken up as follows:

Dr. Max E. Witte, of Clarinda, read a paper entitled, "The Prophylaxis of Insanity".

Dr. J. C. Ohlmacher, of Clarinda, read a paper entitled, "Immunology. A brief consideration of its progress and the limitations of its practical application".

The paper was discussed by Drs. Schilling and Albert.

Dr. Geo. Kessel, of Cresco, read a paper entitled, "Brain Injury; Its Results".

This paper was discussed by Drs. Wahrer, Witte and Waddey.

Dr. F. J. Jarvis, of Oskaloosa read a paper, entitled, "Gonorrhea".

This paper was discussed by Drs. Kennedy, Albert, Ohlmacher and Weston.

Dr. F. W. Cram, of Sheldon, read a paper entitled, "Some Associated Abdominal Troubles".

This paper was discussed by Dr. Cottam.

A paper, entitled, "Osteomyelitis" was read by Dr. S. A. Spilman, of Ottumwa.

The paper was discussed by Drs. Wahrer, Wright, and Power.

During the reading of Dr. Kessel's paper, complaint was made by Dr. Ira Gardner, and others as to the unsuitable condition of the Auditorium, following which the President appointed a committee to select another suitable place in which to hold the succeeding sessions, which committee reported that the Congregational Church was available, and upon motion, it was decided to hold the subsequent meetings at the Congregational Church.

On motion the Society adjourned until 1:30 P. M.

First Day—Afternoon Session.

Pursuant to the adjournment, the Society met at the Congregational Church, and was called to order by the President at 1:30 P. M.

Dr. M. J. Kenefick, of Algona, read, "The Address of the Chairman of Section on Surgery".

Dr. J. R. Walker, of Ft. Madison, read a paper entitled, "The Significance of Heart Murmurs".

A paper, entitled, "High Blood Pressure", was read by Dr. W. H. Rendelman, of Davenport, and a paper entitled, "Arteriosclerosis" was read by Dr. W. L. Hearst, of Cedar Falls.

These papers were discussed by Drs. Bierring and Wahrer.

Dr. Jabez N. Jackson, of Kansas City, delivered "The Address on Surgery, selecting for his subject, "Membranous Periccolitis and allied conditions of the Ileocecal Region".

Dr. J. T. McClintock, of Iowa City, read a paper entitled, "Surgical Physiology".

The paper was discussed by Drs. Guthrie, Jackson and Hornibrook.

Dr. Lewis Schooler, of Des Moines, read a paper, entitled, "Fractures in Children".

This paper was discussed by Drs. Herrick, Wahrer, Bannister, and closing, by Dr. Schooler.

The next paper was read by Dr. A. G. Hejinian, of Anamosa, entitled, "Some observations in the Diagnosis and Treatment of Cholelithiasis".

The paper was discussed by Drs. Branson, a member, Scott, Wahrer and Eddy.

On motion the society adjourned until 7:30 P. M.

First Day—Evening Session.

The society reassembled at 7:30 P. M. and was called to order by the President.

Dr. R. L. Cleaves, of Cherokee, delivered "The Oration on Medicine".

The two other paper, in connection with which the lantern slides were used, were read respectively by Dr. L. W. Littig, of Davenport and Dr. Arthur Steindler, of Des Moines, the first paper being entitled, "Sub-Acrominal Bursitis", and the latter, "Treatment of Lateral Curvature of the Spine".

On motion the society adjourned until 9 A. M. Thursday, May 8, 1913.

May 8—Second Day—Morning Session.

Called to order by the President at 9 A. M.

The Address of Chairman of Section on Medicine, was delivered by Dr. Charles B. Taylor, of What Cheer.

Dr. M. J. Moes, of Dubuque, read a paper entitled, "Pyelo-Cystitis in Childhood".

This paper was discussed by Drs. Fraser, Fuller, Wahrer, and closing by Dr. Moes.

The "Oration on Surgery" was delivered by Dr. J. N. Warren, of Sioux City.

Dr. N. Schilling, of New Hampton, read a paper entitled, "Vagotony".

The paper was discussed by Drs. Ira Gardner, Harris, and closing, by Dr. Schilling.

At this time, Dr. Charles B. Taylor, assumed the chair and announced the "Address of the President," Dr. V. L. Treyner, of Council Bluffs, which was now read.

On motion by Dr. Wahrer, acting president Taylor was authorized and directed to appoint a committee of three to report on the President's address, and accordingly, Dr. D. C. Brockman, of Ottumwa, Dr. J. C. Powers, of Hampton, and Dr. W. W. Pearson of Des Moines, were appointed such committee.

Dr. H. W. Vinson, of Ottumwa, read a paper on "A Few Points Concerning Chronic Interstitial Nephritis Needing Emphasis."

The paper was discussed by Drs. Spilman, Bannister, Eddy, Fuller, and in closing, by Dr. Vinson.

The next paper was read by Dr. N. C. Morse, of Eldora, entitled, "Mechanical or Forceps Delivery".

On motion, an adjournment was taken until 1:30 P. M.

Second Day—Afternoon Session.

The society convened at 1:30 p. m., and was called to order by the President.

Dr. Donald Macrae, Jr., of Council Bluffs, read a paper entitled, "Enteroptosis: A Cause, Diagnosis and Treatment".

Discussion participated in by Drs. Jepson and Herrick, with Dr. Macrae closing.

Dr. Joseph Sailer of Philadelphia, delivered the Address on Medicine. Selecting for his subject, "Recent Advance in the Knowledge of the Pathology and Physiology of the Ductless Glands".

Paper by Dr. G. G. Cottam, of Sioux Falls, on "Prolapsus Uteri."

This paper was discussed by Drs. Williams, McLaughlin, Macrae and Downing. Dr. Cottam closed the discussion.

Dr. Walter L. Bierring, of Des Moines, read a paper entitled "Visceral Syphilis."

Discussion by Drs. Wahrer, Sailer and Fraser. The discussion was concluded by Dr. Bierring.

Papers were then read by Dr. L. W. Dean, of Iowa City, on "Sources of Infection of the Nose and Throat", and by Dr. F. E. V. Shore, of Des Moines, on "Mastoiditis."

These two papers were discussed together by Drs. Bannister, Wahrer, Kenefick, Treyner and Parrish, Dr. Dean concluding the discussion.

The session adjourned at 5:10 p. m.

Third Day—Forenoon Session.

Dr. C. M. Swale, of Mason City, read a paper entitled. "Cancer and Sarcoma of the Breast".

The paper was discussed by Drs. Wahrer, Littig, Downing, Bowen, and in closing, by Dr. Swale.

Dr. E. A. Merritt, of Council Bluffs, read a paper entitled, "Serum and Vaccine Therapy".

The paper was discussed by Drs. Littig and Merritt.

The next paper was read by Drs. Blything and Bendixen, of Davenport, entitled, "Pneumatic Rupture of Bowel, with report of case."

This paper was discussed by Drs. Bowen, Littig, Bryan, Scott, and in closing by Dr. Bendixen.

Dr. G. N. Ryan, of Des Moines, read a paper, entitled, "Importance of Laboratory Examination in Early Infancy."

The paper was discussed by Drs. Scott, Rosenblatt, Merritt, Stone, and in closing by Dr. Ryan.

The Committee on the President's Address submitted the following report.

Your Committee on the President's Address desires to commend very highly his scholarly production and would emphasize some of the many good recommendations made. His suggestions as to vital statistics are eminently to the point, and are of paramount importance to the profession of Iowa and to its people. There is nothing more important to Iowa and the nation from an economic viewpoint than this subject and the views expressed in the address are to the point and worthy of the careful perusal of every member of the Society.

His suggestion that every member of this Association should be in touch with the senator and representative for the district in which he lives and should keep them posted as to the necessity of medical legislation and help enthuse the laity, as well, to the vital importance of these laws, are excellent, and especially recommended by the Committee.

He very appropriately recommends that attention should be devoted to the uplift of the moral standard of the individual members of our profession. The applicant for entrance to our medical school should be examined carefully as to his moral training. If he is looking forward to a commercial profession he should be discouraged. Our State University as indicated by President Bowman's letter, should take a vital interest in this question. The State Board should constantly have in mind the type of the applicant, as well as his professional attainments. If—as our President has suggested—a little attention be given to this subject within a few years the predatory doctor would become an object of derision.

We feel that our President has given us a timely note of warning regarding the work of the Medico-Legal Committee.

It is an assured fact that more than one-half of the malpractice suits brought against the members of our societies are due more to the lack of tact on the part of the doctor than to any error in treatment. Most of the trouble is developed by the doctor 'sueing for the bill (often small amounts). While it is humiliating to lose a just fee or be obliged to reduce it by threat of counter suit, it is much more humiliating, expensive and troublesome to be obliged to go into court and defend his treatment against trumped up evidence furnished by some jealous competitor. It would be far wiser to forego the fee and avoid litigation. A large part of the trouble is due to jealousy of other doctors, and the President has wisely urged the importance of physicians avoiding comments on the work done by their neighbors that would lead to malpractice suits.

In conclusion we commend the paper for its many wise recommendations and valuable suggestions, that will be beneficial both to our Society as well as to the public at large.

Signed: D. C. Brockman, Wm. W. Pearson, J. C. Powers. On motion the report was unanimously adopted.

The Secretary made a report of the proceedings of the House of Delegates. (For full report, see minutes of House of Delegates).

The newly elected President, Dr. L. W. Dean, of Iowa City, was at this time inducted into office. President Dean expressed to the society his great appreciation of the honor conferred upon him, and gave his assurance to the society that he would do the very best he could to make the next meeting, as far as possible, a creditable one.

Continuing the Program:

Dr. W. W. Bowen, of Ft. Dodge, read a paper entitled, "Infection from Gas Bacillus."

This paper was discussed by Drs. Saunders, Cottam and in closing by Dr. Bowen.

Dr. W. L. Downing, of Moulton, read a paper entitled, "Myocarditis". The paper was discussed by Dr. Johnson.

At this time, and at the close of the regular program, Dr. V. L. Treyner, moved a vote of thanks to the profession of Des Moines, and particularly the Committee on Arrangements, for the manner in which they took care of the society, and further, that the Secretary be directed to extend to the profession of Des Moines, and the Polk County Medical Society, this expression of appreciation, for the arrangements made for the care and entertainment of the members of the Iowa State Medical Society.

Upon motion, the society adjourned to meet in Sioux City May 13-14-15, 1914.

HOUSE OF DELEGATES. IOWA STATE MEDICAL SOCIETY.

Sixty-Second Annual Session.
Des Moines, May 7-8-9, 1913.

First Session, Wednesday, May 7, 1913.

The House of Delegates of the Iowa State Medical Society met in the parlors of the Plymouth Congregational Church at 9:15 P. M., with President V. L. Treyner in the chair.

Roll Call showed a quorum present, there being 13 officers and 54 Delegates present. Total, 65—2 of the officers also acting as Delegates.

The Secretary's report was read and received.

Secretary's Report.

The following report is submitted; the number of members for 1912 was 2000. The number for this year, to date, is 1807.

About 125 new members have been received this year. This leaves about 325 of the 1912 members unaccounted for.

The following County Societies have made no report of any kind for 1913:—Clarke, Worth.

The following County Societies have reported members, but have not reported their 1913 officers:—Butler, Crawford, Floyd.

Wright County has not furnished the list of officers, and has sent in only two names for 1913. The County Secretary in reporting these two names, wrote, "these doctors are having a little trouble and they don't want to be suspended."

Buena Vista County has reported officers for 1913, but no dues. One member of this County Society, paid for 1913 last year, so this society has one member in good standing.

Van Buren County has reported officers, but no dues. The Secretary of this County Society, wrote on May 2nd, that they would soon hold a meeting to decide whether to go on.

Clarke County has sent in no report since 1910. I recommend that the charter of this Society be revoked.

Until May 6th, Clayton County was in the same situation, but on that date, I received their 1913 officers and a check to pay the 1913 dues for twelve members. I refer this matter to this body for decision.

In Palo Alto County, where the charter was revoked last year, the Councilor for that district, Dr. Kenefick, has reorganized the Society.

Dr. Throckmorton, Councilor for the 8th Congressional District, has had under consideration the condition in Clarke County, and will no doubt touch on that matter in his report.

The following orders were issued since last report.

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| 511—C. A. Boice, Councilor and Assistant Editor, expenses \$ | 95.18 |
| 512—G. R. Skinner, Expense attending meeting of Board of Trustees | 9.85 |
| 513—W. B. Small, salary and expenses, | 189.40 |
| 514—J. W. Cokenower, Councilor expenses, | 13.00 |
| 515—V. L. Treynor, salary and expenses, | 777.66 |
| 516—H. C. Eschbach, Councilor expenses, | 5.40 |
| 517—Ira K. Gardner, Councilor expenses, | 10.00 |
| 518—T. M. Throckmorton, Councilor expenses, | 16.50 |
| 519—C. P. Frantz, expense of local Committee on Arrangements Hall rent, registrars and stenographer, | 50.75 |
| 520—Woodford and Ainsworth, letter heads, programs, and ribbon badges, | 37.00 |
| 521—Wm. Whitford, reporting sessions and transcribing proceedings, Annual Meeting 1912, | 169.25 |

The By-Laws have not been revised since 1907, and so many changes have been made since then, that some inconsistencies and conflicting laws, have crept in. For instance, three sets of officers are now drawing orders on the Treasurer.

The ordinary expenses of the Society are paid on order of the president, countersigned by the Secretary; the Medico-Legal expense is paid on order of the chairman and secretary of the Medico-Legal Committee; while the expense of publishing the Journal, is paid by order of the Trustees.

Chapter VI, Section 3, of the By-Laws, says, "the treasurer shall pay out money only on a written order of the President countersigned by the Secretary," while in Chapter VIII, Section 8, it is said the Medico-Legal fund, "shall be subject to warrants signed conjointly by the chairman and secretary of the Medical Defense Committee." There is no specific authorization for payment of bills, other than the editor's salary, incurred in the publication of the Journal, and I doubt if the payment of the Editor's salary is definitely authorized.

The Committee on Constitution and By-Laws has devoted much time and attention to the revision of the By-Laws, and your Secretary asks for a careful consideration of the report.

Perhaps a special session on Thursday afternoon, for the consideration of this subject might be advisable.

The great majority of the County Secretaries have been careful, prompt and efficient, and it has been a pleasure to work with them. A few

have been slow with their reports, and some have failed to answer correspondence from the Secretary's office.

There has been a good deal of complaint in regard to the special assessment for the medico-legal fund.

About 120 of our members have taken advantage of the Post Office ruling, which has made the Journal optional, to decline the Journal for 1913. Your Secretary is not sure but that the Journal had better remain optional, even though the Postal Laws no longer require us to make it so.

The work in the Secretary's office would be much facilitated if deaths and removals and changes of County Society officers could be promptly reported to that office.

Moved by Ira K. Gardner, that Clayton County Medical Society's charter be revoked and the remittance now in the hands of the Secretary, be returned. Seconded and carried.

Dr. M. J. Kenefick, Councilor for the 10th Congressional District reported that he had succeeded in reorganizing Palo Alto County Medical Society with 11 members. Dr. Henry Albert moved that a charter be reissued to Palo-Alto County Medical Society. Motion seconded and carried.

Dr. Throckmorton, Councilor for the 8th Congressional District, reported that in his efforts to reorganize the Clarke County Medical Society, he had found the physicians unwilling to pay the dues for 1911 and 1912 and he moved that the charter of the Clarke County Medical Society be revoked. Motion seconded and carried.

Dr. W. B. Small, Treasurer, read his report which was received.

Treasurer's Report For 1912-1913.

Des Moines, Iowa, May 7, 1913.

Mr. President and Members of House of Delegates, Iowa State Medical Society. Your Treasurer begs to make the following report for the year ending April 30, 1913.

Balance on hand as reported at the last meet-

ing, May 6, 1912,\$ 4,579.80
1912.

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| May 16—Order No. 512 G. R. Skinner, expenses as Trustee, | \$ 9.85 |
| May 16—Order No. 513 W. B. Small, Treasurer, salary, desk supplies, postage, etc., | 189.40 |
| May 16—Order No. 514 J. W. Cokenower, expenses as Councilor, | 13.00 |
| May 16—Order No. 515. V. L. Treynor, Secretary, desk supplies, etc., | 777.66 |
| May 16—Order No. 516 H. C. Eschbach, expenses as Councilor, | 5.40 |
| May 16—Order No. 517 I. K. Gardner, expenses as Councilor, | 10.00 |
| May 16—Order No 518 T. M. Throckmorton, expenses as Councilor, | 16.50 |
| May 17—Order No. 519 C. P. Frantz, expenses of Local Committee of Arrangements, | 50.75 |
| May 23—Order No. 511 C. A. Boice, expenses as Councilor and for supplies as per bill, | 95.18 |
| May 25—Order No. 520 Woodford and Ainsworth, programs, badges and letter heads, .. | 37.00 |
| July 5—D. S. Fairchild, Editor, salary for April, May, June, | 375.00 |
| July 5—Washington Co. Press, printing Jour- | |

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| nal for May and June, | 322.50 |
| July 12—Wade, Dutcher & Davis Medico-Legal Services for April, May, June, | 499.14 |
| July 22—Wm. Whitford, services as official stenographer, | 169.25 |
| Aug. 7—Washington Co. Press, printing Journal for July, | 214.75 |
| Aug. 13—D. S. Fairchild, Editor share of expense in securing advertising representative, .. | 2.50 |
| Sept. 9—Washington Co Press, printing Journal for August, | 167.82 |
| Sept. 18—R. H. Randel 50 per cent of commission for ads, | 4.25 |
| Sept. 24—Washington Co. Press, printing Journal for September, | 181.70 |
| Oct. 21—D. S. Fairchild, Editor, salary for July, Aug. Sept. | 375.00 |
| Oct. 21—Wade, Dutcher & Davis, Medico-Legal Services for July, Aug., Sept., | 468.50 |
| Oct. 31—Washington Co. Press, printing Journal for October, | 183.20 |
| Nov. 4—C. E. Cooper Medico-Legal Services as per bill, | 150.00 |
| Nov. 22—Washington Co. Press, printing Journal for November, | 182.25 |
| Nov. 23—Wolfe & Wolfe, Medico-Legal Services as per bill, | 75.00 |

1913.

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| Jan. 11—V. R. McGinnis, Medico-Legal Services as per bill, | 100.00 |
| Jan. 11—Wade, Dutcher & Davis, Medico-Legal Services for Oct., Nov., Dec., | 731.61 |
| Jan. 28—Washington Co. Press, printing Journal for January, | 199.20 |
| Feb. 7—D. W. Hamilton, Atty-Medico Legal Services as per bill, | 250.00 |
| Feb. 8—Washington Co. Press, printing Journal for December, | 183.29 |
| Feb. 10—D. S. Fairchild, Editor, salary for Oct., Nov., Dec., | 375.00 |
| Feb. 25—Washington Co. Press, printing Journal for February, | 262.00 |
| April 2—M. M. White, Medico Legal Services as per bill, | 50.00 |
| April 2—D. S. Fairchild, Editor, salary for Jan., Feb., March, | 375.00 |
| April 8—Washington Co. Press, printing Journal for March, | 187.80 |
| April 24—Wade, Dutcher and Davis, Medico Legal Services for Jan., Feb., March, | 1,031.29 |
| April 24—Dr. J. L. Peppers, Medico Legal Services by Birdsall and Birdsall as per, bill, | 80.00 |
| Interest for year, | \$ 92.60 |
| Received from D. S. Fairchild, Editor of | |

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| Journal to May 1, 1913, | 282.70 | |
| Membership dues from County Society to May 1, 1913, | 7,902.25 | |
| <hr/> | | |
| Disbursements for the year from May 6, 1912 to May 1, 1913, | | \$ 8,400.79 |
| Balance on hand May 1, 1913, | | 4,456.56 |
| <hr/> | | |
| | \$12,857.35 | \$12,857.36 |
| Medico Legal Fund Statement. | | |
| May 6, 1912 overdraft, | | \$ 698.28 |
| Medico Legal expense from May 6, 1912, to May 1, 1913, | | 3,435.54 |
| Receipts of Medico Legal Fund from May 6, 1912, Burlington meeting to May 1, 1913, | \$ 3,755.00 | |
| May 1, 1913 overdraft | 378.82 | |
| <hr/> | | |
| | \$ 4,133.82 | \$ 4,133.82 |

Last year on account of the deficit, an assessment of one dollar per member for one year was made. I believe this should be permanent and I offer the following amendments.

In Section VIII Chapter VIII of the By-Laws strike out the one dollar and insert two dollars.

In Section I Chapter IX of the By-Laws, the first line, strike out the three and insert the word four.

Journal Statement.

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| Monies received from D. S. Fairchild, Editor of Journal, from May 6, 1912, Burlington meeting, to May 1, 1912, | \$ 282.70 | |
| Expenses of the Journal from May 6, 1912, Burlington Meeting, to May 1, 1913, .. | | \$ 3,216.26 |
| Difference between receipts and expenses, .. | \$ 2,933.56 | |
| <hr/> | | |
| | \$ 3,216.26 | \$ 3,216.26 |

To Whom It May Concern:

We hereby certify that there is \$4,456.56 on deposit in this bank to the credit of Iowa State Medical Society (W. B. Small, Treasurer.)

Yours very truly,

Chas. W. Knoop,
Cashier.

Dr. C. A. Boice, Secretary of the Council, read the report of the Council by districts, all reporting except the 3rd.

First District, C. A. Boice, Councilor.

Of the seven counties, all have reported save Van Buren.

Washington. 26 members paid up, three new ones, only one delinquent, interest good.

Louisa. 4 members, several members and non-members prefer to abandon local Society and join contiguous societies, Des Moines, Washington and Muscatine.

Lee. 53 eligible men in county. 49 members last year, 32 paid up for 1913. Average attendance at meeting 32, good general interest.

Henry. 33 eligible, 18 members last year, 14 now, no meetings, fair interest.

Jefferson. 20 eligible, 13 members last year, 15 now, very good interest.

Des Moines. 35 members last year, 31 now, 12 meetings during year, average attendance 10, fair interest.

Second District, L. W. Dean, Councilor.

The membership in the Societies has remained numerically approximately the same.

The meetings on the whole have been more regular, better and more interesting.

Fourth District, Ira. K. Gardner, Councilor.

The 4th District has made some progress during the past year in professional interest.

I have received reports from all of the 10 Counties except one, that is Worth, although I have written about 10 letters to this County.

One other county, viz. Clayton has held no meeting for the past 3 years. Also the same condition exists in Floyd County. No meetings have been held for at least 2 years. Also Fayette County has held no meeting during the past year. Number of members, 105. No. of members withdrawn 11, No. of members admitted, 9, No. of eligible members, 160, No. of deaths, 2.

Fifth District, G. E. Crawford, Councilor.

In some of the Counties the interest is good, others fair, and in several nil, with some falling off in membership in most of the counties. Only two made gains, viz. Marshall Co., and Linn Co., of 2 and 8, respectively.

In Linn County, the interest has been greatly increased the past year, with a much larger attendance than heretofore. Bi-monthly meetings have been held. The plan has been to have two members read brief practical papers, and then have some prominent man from the outside give an address or a clinic. This plan has worked the best of any one yet tried; among the outside men was Howard Kelly of Johns Hopkins who addressed a full attendance of the County and a number of physicians from surrounding Counties.

The reports from the other five Counties show a loss of 15; a net loss of 5 for the 5th District. The final reports of the Treasurers may change this somewhat.

Sixth District, H. C. Eschbach, Councilor.

From the accompanying reports of the County Secretaries, I summarize the following for the Sixth District.

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| No. of Physicians eligible to membership, | 216 |
| No. of members last year, | 165 |
| No. of members this year, | 167 |

No deaths within the district. The number of withdrawals from Society is offset by the number admitted.

The average attendance at meeting varies from 1-3 to 1-2 the membership. The general interest of those attending meetings is generally good. How to increase the attendance of our members on the regular meetings is still the great problem of all our Secretaries, and all those interested in the work and purposes of the organization.

It is the unsolved and unsolvable problem of our Society.

Seventh District, J. W. Cokenower, Councilor.

The Seventh District, every Co., reported, has had a very prosperous Medical Society year, in number of meetings, attendance and scientific

work done, even Warren County that reported no meetings held last year, reports this year two regular and three called meetings with good attendance and satisfactory interest manifested.

There has been reported three hundred and twenty-two eligible and two hundred and forty-four members, making seventy-six percent membership. Thirty-one meetings with average attendance at each of twenty, total number of papers read, ninety and about same number of clinics.

Dr. George P. Hanawalt one of the most honored and best known physicians in the state and a charter member of the Polk County Medical Society, died last fall.

Eighth District, T. M. Throckmorton, Councilor.

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| Total number of Doctors eligible in the 8th District in the 11 Counties reported by Secretaries, | 279 |
| Total number members in District, | 147 |

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| Number outside of the fence, | 132 |
| Total number of Doctors excluding Osteopaths in the 8th District according to late Directory, | 314 |
| Reported eligible, | 279 |

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| Irregular, homeopaths, eclectics, etc., | 35 |
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Appanoose Co. has, as reported to me by its efficient secy. Dr. W. A. Harris of Centerville, 43 doctors eligible to membership of whom 31 were members of the County Society last year.

Number of members this year (1913) 20.

They held 12 meetings during the year.

No deaths in the County.

Wayne County, W. G. Walker, Secy. Corydon, reports 27 doctors in the county eligible to membership.

Number of members last year 13,

Number of members this year 10,

Number of meetings held 2. No deaths.

Decatur County; Fred A. Bowman, Secy., Leon, reports 27 doctors eligible to membership.

Number of members last year 12.

Number of members 1913, 13.

No. meetings held, 3. No deaths.

Ringgold County; Dr. Sam'l Bailey of Mt. Ayr, Secy.

Number of doctors eligible 21, number meetings last year 10.

Number members 1913, 12; three meetings held during the year.

No deaths.

Taylor County, C. M. Paschal, Secy., of Bedford, reports 25 doctors eligible to membership.

Number of members in society last year 14, this year 1913, 11.

Number of meetings held 3, no deaths.

Page County, B. S. Barnes Secy., of Shenandoah, reports 44 doctors eligible to membership. Number of members last year, 27.

Number members for 1913, 28. Number paying State dues 20.

Number of meetings held 2. No deaths.

Freemont County, A. E. Wanamaker Secy., Hamburg, reports number of doctors eligible to membership 26; membership last year 14, membership this year 15; meetings held during last year four.

Deaths 1, that of Dr. L. I. Kynett of Hamburg.

Adams County, C. H. Bryant Secy., Corning, reports

number of doctors eligible 13; number members last year 10.

Number members this year 10. Meetings held during year 2, no deaths.

Union County, T. V. Golden, Secy., Creston, reports

number of members eligible to membership 21.

Number members last year 17, this year membership 17.

Meetings held during the year one. No deaths.

Clarke County, has dropped out; no meetings held last year or dues paid to the State Society since 1910. Number of doctors eligible to membership 15. Hope to reorganize this year.

Lucas County, A. L. Yocum, Secy., Chariton, reports.

Number doctors eligible to membership 15.

Number members 1913, 13. Number meetings 3. No deaths.

To recapitulate, we have in the 11 counties in the 8th District, 227 eligible doctors to County and State Society, of whom 146 now belong to the county societies, and 143 to State Society.

Ninth District, A. L. Brooks, Councilor.

| | |
|--|-------|
| No. doctors eligible to membership in Counties, | 219. |
| No. members last year, | 157. |
| No. members dropped or withdrawn, | 17. |
| No. members admitted during year, | 20. |
| No. members this year or now, | 162. |
| No. meetings held during year, | 23. |
| Average attendance, | 100.4 |
| No. special or call meetings, | 0. |
| General interest manifested, Fair 3, Good 4, Poor 2, None 1. | |
| No. of deaths, | 2. |

Tenth District, M. J. Kenefick, Councilor.

| | |
|---|-----|
| No. eligible in 11 counties, | 218 |
| No. admitted 1912, | 15 |
| No. members this year, | 144 |
| No. deaths 1912, | 0 |
| No. Counties organized, 14—entire district. | |

Eleventh District, G. C. Moorhead Councilor.

In the Counties reporting, I find there are 247 physicians eligible to membership. Of these 127 are members as against 129 last year. There have been 20 removals and 3 accessions. There has been 32 meetings with an average attendance of 8. General interest is good in about 1-2 the counties. There was one death, that of Dr. Rust of Monona County.

Report of the Committee On Public Policy and Legislation.

Iowa State Medical Society.

Dr. Thos. F. Duhigg, Secretary of the Committee on Public Policy and Legislation, read the report of the Committee which report was received.

Probably the most important item of health legislation that has passed in years, was the passage of the bill reorganizing the Board of Health and Medical Examiners. On and after July 1, 1913, the Board will consist of a secretary, who shall be the executive officer, four physicians and a sanitary engineer, to be appointed by the Governor, the Secretary of State and State Auditor. Not more than three shall belong to the same political party and not more than two to the same school of medicine. Physicians on the Board receive a salary of \$900.00 a year; they are appointed without reference to their geographical location and the old system of health districts is abandoned.

Another important thing was the passage of the resolution which

authorized the Board of Health to co-operate with the National Government in a sanitary survey of the streams and rivers of the State with the object of ultimately inaugurating some system of permanent sanitary inspection of the streams and rivers.

The hotel inspection law was revised to make it more beneficial, and to include toilets for railway stations and cars.

A bill was passed which provided for the inspection of bakeries, restaurants and eating houses.

After July 4th, physicians must give a numerical report of all cases of gonorrhea and syphilis which come under their care.

The bill providing for the sterilization of criminals was strengthened.

The Vital Statistic bill failed to pass because the committee on appropriations would not give more than \$5,000. The best authorities said that it could not be put in operation for less than \$10,000. Therefore, the passage of the bill with a \$5,000 appropriation was not asked for.

The bill repealing the osteopathic law and licensing in their stead, so-called mechanical therapeutists, passed the senate on April 3rd, and was re-considered and defeated on the following day.

Very respectfully,

Thos. F. Duhigg,

Committee, Public Policy & Legislation.

The report of the Medico-Legal Committee was read by Dr. D. S. Fairchild, and received.

Report of Committee on Medical-Defense.

The committee on Medico-Legal Defense begs leave to make the following report, extending from April 1st, 1912 to April 1st, 1913.

Last year it was found that the Committee on Medical Defense had drawn from the Treasury of the State Society more money than had been appropriated, that is the \$1.00 per annum per member had not been sufficient to meet the expenses of the Committee, and that the account had been overdrawn to the amount of \$698.28. A resolution was offered increasing the dues for 1913 from \$3.00 per annum to \$4.00, \$2.00 of which to be used by the Committee on legal protection. This was to be for one year only. The Committee is of the opinion that the dues should be made permanently \$4.00 or until it shall be shown that the expenses of the Committee can be lessened. It has become apparent that suits against members of the medical profession are increasing and will continue to increase for some time to come. This seems to be true all over the country, particularly in the West and Southwest. The reports from committees on medical protection show an alarming state of affairs, and much anxiety is expressed by the journals of the various state societies as to the outcome of this distressing state of affairs. The courts appear to be holding the medical profession to a stricter accountability and also holding that the advancements in medical and surgical treatment have increased the responsibility of the medical practitioner. It is also held that the failure to use X-Ray examination by doctors living in communities where X-Ray apparatus is accessible, and the failure to use tetanus antitoxin in certain kinds of infection of wounds, is considered negligence. Just how far the courts may go in this direction is difficult to say, but unquestionably the medical man must give more and more attention to the results of his treatment.

The committee is thoroughly of the opinion that medical defense is without value unless it is efficient, and after considering various plans of defense, we have come to the conclusion that the plan adopted by the great corporations for the defense against claims is the better plan; that

is, that we employ a Chief Attorney of such high standing and skill that no medical man within the jurisdiction of the state will have any doubt but that his case will be defended in the most skillful manner. Furthermore; the Committee is of the opinion that no more economical plan could be adopted. The Committee has refused to pay bills to local attorneys that have not been authorized by either the Committee or the Chief Attorney, as we feel that economy is gained by watchful care as to the employment of attorneys. The Committee is of the opinion that if the \$4.00 is made permanent, that the \$2.00 assigned to legal defense would enable them to meet all of the expenses of the defense and pay for the transcript in cases of appeal. Within the past year two members of the State Society have been obliged to pay out of their own pockets between \$200.00 and \$300.00 each for court transcripts. The Committee believe that this should be included in the legal expenses of the cases and that the money paid out by these gentlemen should be refunded.

The report for 1912 showed that the legal expenses for the defense of malpractice suits reached the large sum of \$4,599.65. The Committee is pleased to say that the expenses for the past year have been only \$3,355.54.

(Judge Wade, \$2,730.54.)
(Local Attorneys, 625.00.)

Total, \$3,355.54.

The following is a summary of certain particulars in all cases commenced since the establishment of the Medical Defense Department of the Association.

| | |
|---|----|
| Cases commenced since organization of department, | 65 |
| Cases commenced prior to the report of 1909, | 15 |
| Cases commenced during 1909-10 | 13 |
| Cases commenced during 1910-11 | 10 |
| Cases commenced during 1911-12 | 14 |
| Cases commenced during 1912-13 | 13 |
| Cases pending at date of 1909 report, | 7 |
| Cases pending at date of 1910 report | 10 |
| Cases pending at date of 1911 report | 14 |
| Cases pending at date of 1912 report, | 25 |
| Cases now pending, | 26 |
| Total cases disposed of, | 39 |

Nature of Cases.

| | |
|---|----|
| Malpractice in removing seed wart, | 1 |
| Malpractice in not discovering and uniting severed ligaments of the wrist | 1 |
| Alleged assault | 2 |
| Removal of cancer of the hand, | 1 |
| Conspiracy to have plaintiff declared insane, | 1 |
| Fracture of arm, | 12 |
| Fracture of leg, | 19 |
| Appendicitis—sponge case, | 1 |
| Appendicitis—malpractice in operation, | 1 |
| Appendicitis—exploratory opening, | 1 |
| Childbirth, alleged failure to attend after alleged agreement to do so; child died. (Separate action by father and mo- ther), | 2 |
| Hand crushed, alleged improper treatment, | 1 |
| Eye, alleged improper treatment | 1 |

| | |
|--|--------------|
| Infection, childbirth, | 2 |
| Medical treatment of child | 1 |
| Abortion, improper after-treatment | 3 |
| Stomach trouble, alleged improper treatment and failure to treat | 1 |
| Anesthetic, death under | 1 |
| Improper diagnosis of diphtheria, | 1 |
| Improper diagnosis of broken ribs | 1 |
| Removal of uterus, alleged negligent incision of the bladder. | 1 |
| X-Ray burn | 2 |
| Infection following amputation | 1 |
| Alleged improper treatment of scald | 1 |
| Removal of adenoids, | 2 |
| Alleged improper abdominal incision | 2 |
| Failure to administer serum; patient died of lock jaw | 1 |
| Fracture of collar bone | 1 |
| Willful insertion of instrument, producing abortion | 1 |
| Operation for pregnancy of fallopian tube | 1 |
| Total amount of damage claimed in all cases to date, | \$630,215.00 |
| Judgments recovered against members | 2 |
| Aggregate amount of judgments | \$ 2,100.00 |
| Consultation on cases threatened in which no proceedings were had | 40 |

In one of these cases, Adams vs. Junger, the supreme court reversed the judgment which was for \$1,000.00 which leaves at the present time one judgment against members of the society for the sum of \$1,100.00. As you know, no judgment has ever been paid.

Iowa City, Iowa.

April 14, 1913.

Reports of the Committee on Lodge practice and the Committee on Necrology were deferred until the next session.

Adjourned to meet by districts to select nominating Committee which was reported as follows.

| | |
|--------------------------|-----------------|
| First District | F. C. Mehler. |
| Second District | Henry Albert. |
| Third District | H. B. Gratiot. |
| Fourth District | G. A. Plummer. |
| Fifth District | J. E. Luckey. |
| Sixth District | W. W. Eastburn. |
| Seventh District | B. G. Dyer. |
| Eighth District | T. E. Powers. |
| Ninth District | Max Emmert. |
| Tenth District | W. T. Peters. |
| Eleventh District, | M. N. Voldeng. |

Thursday Morning Session.

Minutes of Wednesday evening session read and approved. Dr. C. A. Boice read the report of the Committee on Necrology as follows:

Necrology Report 1913.

| | | |
|-----------------------------|------------------------|-------------------|
| Dr. G. P. Hanawalt, | Polk County, | July 6, 1912. |
| Dr. Frank R. Wilson, | Henry County, | October 6, 1912. |
| Dr. Calvin W. Smith, | Muscatine County, | February 9, 1913. |
| Dr. S. G. Gregg, | Henry County, | January 23, 1913, |
| Dr. Thos. W. Mulhern, | Adair County, | April 19, 1913. |
| Dr. Allen Staples, | Dubuque County, | April 3, 1913. |
| Dr. J. F. H. Sugg, | Clinton County, | March 23, 1913. |

Dr. W. H. Brown, Blackhawk County, February 27, 1913..
 Dr. A. D. Bundy, Mitchell County, February 21, 1913.
 Dr. F. W. Daubrey, Winneshiek County, November 1, 1913.
 Dr. David Rust, Monona County, March 29, 1913.
 Dr. F. L. Woodburn, Washington County, . . June 4, 1912.
 Dr. Daniel Jackson, Pottawattamie County, . May 13, 1912.
 Dr. Joshua Symington, Hardin County, April 21, 1913.
 Dr. Joshua Worley, Benton County, May 19, 1913.

Respectfully,

C. A. Boice, Chm.

Dr. H. G. Langworthy of the special Committee on Contract and Lodge practice made the following report.

Report of Committee on Contract and Lodge Practice.

In accordance with a resolution adopted by the House of Delegates last year a special committee of three was appointed by the retiring president to report before this body as to the "status of Lodge and Contract Practice in this state with recommendations." This the committee has tried faithfully to do with the sole object in view of making the report really worth while and without presenting any time consuming detailed mass of information. Where such a vital matter as concerns the actual income of the physician and his family is at stake we realize the importance of laying down safe and sane recommendations so that the profession of Iowa may have an honest guide to follow. With the foregoing in mind question blanks and letters were sent to all county secretaries and while we did not get in touch with everyone of them our report does cover completely seventy-two counties which is sufficient to justify any remarks along these lines which the committee may feel called upon to make. The following classes of contract practice were reported which will be considered in the order named: 1. Railroad Contracts; 2. Contracts with Local Industries (Factories, Mines, etc.); 3. Contracts with counties for indigent Poor; 4. Contracts with Fraternal Order or Lodges; The important points relating to our above classifications are as follows:

Railroad Companies—First as to railroad company contracts with physicians for surgical aid which take in practically all cities and towns of any size along main lines. In only four of the seventy-two counties actually heard from has there been any complaint at all that the rights of other Practitioners have been infringed. In even these few instances some of the objections might be put down as being possibly due to personal rivalry or excessively keen local competition and therefore need not seriously concern us. Further in only three instances has there been a complaint that the compensation is wholly inadequate. From the foregoing therefore the committee feels that reputable physicians who are honest with themselves and straightforward with railroad companies can carry in work with railroads on a fair basis so that neither party need be ashamed of it.

2. Contracts with local Industries—Local industrial contracts exist of course only in those localities where special interests have large manufacturing plants employing a great many men therefore, touch, we find only twenty percent of the counties. As a whole there has been no serious complaint that the compensation is inadequate or that the rights of other practitioners have been infringed. We find however that the holding of such contracts involves the use of fairness and tact toward other physician or some local friction is very apt to occur. So long however as we have no serious protest from the Medical profession indicating that an undue advantage is being taken by such contract physicians and also so long as

there seems to be a disposition to give such contract doctors a moderate remuneration for their skill and time it is only fair to leave any special matters possibly needing adjusting to the respective county societies most affected. The only safe rule to make here we believe however is that whenever a contract is presented to any physician which he feels is not only taking an unwarranted advantage but also lowering the standards of the profession for perhaps all time to come he should refuse such contract absolutely. While the committee realizes that there are fair as well as unfair contracts offered physicians from local concerns who may wish to protect themselves from unjust liability claims, the ground to follow is that fundamental Principle that it is always harmful to contract for an indefinite amount of work for a small stipulated fee. In refusing a contract of a questionable character we urge every physician first to go direct to those in authority offering such contracts and give good clear reasons why the proposition cannot be accepted and demand that an agreement be put to such a basis that the physician feels that he can honorably accept it. If such a straightforward course should not succeed the matter can be quietly talked over with the board of censors or officers of the County Medical Society and if deemed advisable a concerted effort made to discourage any other physician from lending a too willing ear.

3. Contracts with Counties for Indigent Poor,—In regard to contracts with counties for the care of the poor, reports from considerably over one-half of the counties heard from where they have existed, clearly indicate that this matter is the subject of much discussion on the part of local doctors and county Societies. Indeed the very fact that a resolution was adopted at our last state meeting asking that Contract and Lodge Practice be investigated proves that a great many supervisors and officers of fraternal organizations seem to think that they are better judges of what the physicians should receive for services than the doctors themselves. As a committee we must go on record as remonstrating in no uncertain tones against conditions in any county wherein a physician is not paid anywhere near an honest price for services rendered or at best only a half hearted attempt or perhaps no effect made at all to pay him. Such a situation can only work injury to both patient and doctor but more particularly to the poor people themselves for when a doctor engages to work for a county or lodge for less than he can afford to, he must necessarily neglect these patients in more ways than one. Where county boards have refused to pay a doctor for his services or cut down his bills to one-half or one-quarter or let out contracts for both services and medical and surgical supplies at what they know to be ridiculous fees and unworthy of the people they represent, it is time that some concerted action be taken that will re-establish honest fees and preserve our own self respect in the eyes of the public and profession. In making our recommendation to meet this condition we wish to state that while we realize it is one thing to investigate and report on conditions as they exist and often quite another to make clear cut recommendations to correct abuses, nevertheless our common sense and judgment bids us insist that the matter can be righted very quickly by means of professional co-operation working through the county medical society together with publicity of the wrong that results to charity patients and the danger to the public from the spread of contagious diseases that are allowed to circulate by reason of the neglect or carelessness of the county physician. If every respectable physician in a county is brought into the fold, with a little backbone every society can insist that no contract with a great organization such as a county shall be entered into by any member without the general nature of the contract being approved either by the board of censors, a special committee of not less than five members or pos-

sibly by the Society itself. When it is once definitely determined that a member who contracts for the county poor along other lines than that agreed, will be promptly disciplined or expelled for violation, beneficial results will be sure to follow almost at once. In some counties where this has been tried the result has been that the Board of Supervisors has established a fairly reasonable minimum fee, the contract going to the doctor exerting the most influence to get it; or a contract is let to the county society at a fair price and the proceeds divided pro rata among the members; or a fair remuneration given for each case treated, authority to go ahead on a case being secured from some one connected with the Board.

4. Contracts with Fraternal organizations or Lodges—Contracts with lodges is one of the most important matters before this body for consideration. While fortunately they do not exist as yet in a great many counties, where they do exist, they are already proving a serious menace toward obtaining a decent livelihood from the practice of medicine. The following Lodges have been reported to us as being the worst offenders, Moose, Eagles, Owls and Foresters. A few reports which have come in to us from county secretaries would seem to indicate that the Railroad Employees Associations will also have to soon be placed in the same class as Lodges unless they mend their ways. Organizations of this class pay the physicians anywhere from one to two dollars per year for each individual member. As a member may be the head of a family and treatment of the member's of the family is also included with but little difference in the yearly sum paid in, it is easy to see that the holding of such pernicious contracts play an important part in the ethical and economical conditions of a community making it well nigh impossible for the honest well trained physician to support himself and his family no matter how faithfully he may labor. As many local county medical societies have been utterly unable to control the evil without serious disruption owing to the fact that men of unquestioned reputation and standing have occasionally been the very ones engaged in this most vicious form of contract practice and in spite of the fact that our Principles of Medical Ethics states that "It is unprofessional for a physician to dispose of his services under conditions that make it impossible to render adequate service to his patient, or which interfere with reasonable competition among the physicians of a community" the committee would lay down the following recommendations to be strictly adhered to in order to stamp out a real menace. First, line up all men inclined to this kind of work by tactful missionary work gathering all reputable physicians into the society and Second, incorporate into the By-Laws of the Society, as has been done in one county a clause clearly stating that "No member shall do lodgework, that no member shall consult with one who does lodge work, and that no member shall meet in consultation or assist anyone who does consult with a physician doing this type of lodge contract practice." Infraction of the rule can be punished by varying degrees of discipline on the part of the society as thought wise in each particular instance. A little backbone for the first year or two is essential at first but the good of all should be made to over ride individual attempts to evade the law.

In closing, the committee wishes to say that while at present no immediate blame can be attached to men holding questionable contracts in counties where definite action has not yet been taken on these matters, nevertheless it is our judgment that the State Society should very soon take some action looking to a general betterment of conditions as relating to two very unsatisfactory forms of contract, i. e. lodge work and contracts with counties for the indigent poor. In establishing such committee

however some slight assurance of reasonable permanency should if possible be tentatively given the group of men composing it so that a too rapid changing of personnel might not suddenly result in a board somewhat unfamiliar with the general situation throughout the State.

Respectfully submitted,

H. G. Langworthy, Dubuque, Chairman.

D. C. Brockman, Ottumwa.

C. J. Saunders, Fort Dodge.

Dr. Ira K. Gardner moved that the report be adopted, motion seconded and after discussion by Drs. Ira K. Gardner, Kennedy, Luckey, Hobson, J. L. Augustine, G. E. Cawford, Jarvis, McManus and Durant, motion carried.

Dr. Max Emmert, Chairman of Committee on Constitution and By-Laws reported recommending the following changes in the By-Laws. Amend Chapter I, Section 2, to read Secretary or Treasurer, instead of Treasurer.

Chap. II, add the following to be known as Sec. 3. "The fiscal year of this Society shall be from April 1, to the following March 31."

Chap. VIII, Sec. 8, Strike out the words \$1.00 and insert in lieu thereof the words "two dollars".

Chap. IX. Sec. 1. Strike out the words "three dollars" and insert in lieu thereof the words "Four dollars".

Chap. I, add the following provision to be known as Sec. 6. "Provided that if the Annual report and the payment of dues of any Component Society is not received by the Secretary of the State Society for two consecutive years then the charter of that Society shall be automatically revoked, and the Secretary of the State Society shall notify the Secretary of such Society to that effect."

Chap. IV. Sec. 9. Amend so as to read, "It shall present a summary of its proceedings of the previous year at the first general meeting of the Society and shall publish the same in the Transactions."

Chap. VI. Sec. 3. Amend so as to read, "The Treasurer shall give bond in the sum of \$5000.00 such bond to be procured from some reliable security Company and to be approved by the Board of Trustees. The expense of procuring such bond to be paid by this Society. Said bond to be held by the Board of Trustees. All surplus money in the hands of the Treasurer shall be placed at interest in some Bank approved by the Board of Trustees, and such interest shall be turned into the Treasury of the Society. The Treasurer shall demand and receive all funds due the Society from the Secretary, together with the bequests and donations. He shall pay money out of the Treasury only on a written order of the President counter-signed by the Secretary and approved by the Board of Trustees. He shall subject his accounts to such examination as the House of Delegates may order. And he shall annually render an account of his doings and of the state of the funds in his hands. He shall charge upon his books the assessment against each component Society at the end of the fiscal year; he shall collect and make proper credits for the same, and perform such other duties as may be assigned to him.

Chap. VI. Sec. 4. (a) Insert after the words "Treasurer" and before the following word "and" this sentence, "and he shall collect all assessments against each component Society." (b) The following sentence to be appended to the last sentence of this section, "and shall be paid quarterly".

Chapter VI The following to be known as Sec. 5. Chap. VI. "The Board of Trustees shall have charge of the property and the financial affairs of the Society".

Chap. VII. Sec. 2. The last sentence to be amended so that following the word "imposed", and before the word "shall" this sentence be inserted. "Having been approved by the Board of Trustees".

Chap. VIII. Sec. 5. Amended by striking out the word "consisting" and substituting in lieu thereof the words "shall consist".

Chap. VIII. Sec. 7. Amend the first sentence so that it shall read, "The Committee on Arrangements shall consist of the Committee on Scientific work and two members elected by the Component Society in the territory in which the annual session is to be held".

Chap. VIII. Sec. 8. Amend by appending the following to the last sentence, "And approved by the Board of Trustees".

Chap. IX. Sec. 3. Amend so as to read as follows, "All motions or resolutions appropriating money shall specify a definite amount or so much thereof as may be necessary for the purpose indicated, and on a call of the Ayes and Nays, must be approved by the Board of Trustees before, being presented for final action to the House of Delegates."

Chap. IX. Amend by the addition of the following provision to be known as Sec. 4 of Chap. IX.

"The actual necessary expenses of conducting the business of this Society during the interval between the Annual Session, on approval by the Trustees, shall be paid by the Treasurer on a written order of the President, countersigned by the Secretary, and a report of said expenses and expenditures shall be made by the Secretary at the Annual meeting of the House of Delegates".

Chap. XII. Sec. 9. Amend so as to read, "A physician living near a County line may hold his membership in that Society most convenient for him to attend provided no objection is made by the Society in whose jurisdiction he resides".

Proposed Amendments to the Report of Committee on Publication adopted at Des Moines, Iowa, May 18, 1912. Fourth Recommendation to be amended by appending the following provision; "Salaries and expenses to be paid by the Treasurer on a written order of the President, countersigned by the Secretary when authorized by the Board of Trustees".

Sixth recommendation to be amended by appending the following provision, "and that expenses accruing therefrom shall be paid quarterly by the Treasurer, on a written order of the President, counter-signed by the Secretary when authorized by the Board of Trustees."

NOTE-MOTION that report as amended be incorporated into the By-Laws and be known as Chapter XIV and that each recommendation be numerically classified as a Section.

Dr. Rendleman of Davenport proposed the following amendments to the Constitution and By-Laws.

Amend Article VIII, Sec. I, of the Constitution by inserting the words "a President-Elect" after the words "Vice-Presidents" in the third line of said Section of said Article.

Amend Article VIII, Sec. 2, of the Constitution by striking out the word "President" in the first line of said Section, and inserting instead the word "President-Elect."

Add a new section to the Constitution, said new Section to be known as Article VIII. Section 4.

Sec. 4. That at the election of officers at the session of 1914 there be elected a President who shall enter upon the duties of his office at once, and also a President-Elect who shall enter upon the duties of the Presidency one year later: There after, the President-Elect shall enter upon the duties of the Presidency one year from the date of his election.

Amend Chapter V, Sec. 2, of the By-Laws by striking out the last

thirty words of the said Section, or all the said Section after the word "office" in the sixth line from the end of the Section, and inserting instead, "of President-Elect (in 1914 President also), the names of three members for the office of secretary, (when elected), the names of three members for the office of Treasurer (when elected), and one member for each of the other officers to be elected. Two candidates for President-elect shall not be named from the same county."

Dr. Small moved that the Medico-Legal Committee be instructed to cancel the retainer fee of the Attorneys employed by this Committee. Seconded by Dr. Voldeng—after discussion by Drs. Emmert, Magee and Fairchild, the motion carried.

The President announced the following as the Finance Committee. J. L. Augustine, A. J. Hobson, and J. E. Luckey.

Roll call showed 47 Delegates and 14 officers present.

On motion adjourned to meet Friday at 8 A. M.

Friday Morning Session.

Called to order by President V. L. Treynor. Roll call showed 39 delegates and 13 officers present. Minutes of Thursday morning session read and approved. The Nominating Committee reported as follows:

To the Officers and Members of the House of Delegates.

Your nominating Committee begs to present the following nominations.

For President:

Dr. L. W. Dean, Iowa City,

Dr. H. C. Eschbach, Albia,

Dr. I. K. Gardner, New Hampton,

For First Vice President:

Dr. F. S. Smith, Nevada.

For Second Vice President:

Dr. S. A. Spilman, Ottumwa

For Councilors:

Dr. G. E. Crawford, Cedar Rapids. 5th District.

Dr. H. C. Eschbach, Albia. 6th District.

For Trustee:

Dr. G. N. Ryan, Des Moines.

Delegate To American Medical Association:

Dr. J. C. Rockafellow, Des Moines.

Alternate Delegate To The American Medical Association:

Dr. C. S. James, Centerville.

Committees.

Medico-Legal:

Dr. L. W. Littig, Davenport.

Public Policy & Legislation:

Dr. T. F. Duhigg, Des Moines.

Dr. W. Woodbridge, Central City.

Dr. F. C. Mehler, New London.

Publication:

Dr. J. W. Osborn, Des Moines.

Dr. M. J. Kenefick, Algona.

Dr. W. L. Bierring, Des Moines.

Finance:

Dr. A. P. Johnson, Sigourney.

Dr. Max Witte, Clarinda.

Dr. W. W. Pearson, Des Moines.

Constitution & By-Laws:

Dr. Max Emmert,Atlantic.
 Dr. E. Hornibrook,Cherokee.
 Dr. L. Schooler,Des Moines.

Place For Meeting For 1914:

Sioux City, Iowa, May 13-14-15, 1914.

Signed,

Henry Albert, Chairman,
 Max Emmert, Secretary.

The president appointed Drs. Rendleman and Boice tellers and a ballot was taken for president, which resulted, Dr. H. C. Eschbach, 10. Dr. Ira K. Gardner, 11. Dr. L. W. Dean, 31 votes. Moved by Dr. Eschbach and seconded by Dr. Gardner, that Dr. Dean's election be made unanimous. Carried and the President announced Dr. L. W. Dean to be unanimously elected President for the ensuing year.

Dr. H. C. Eschmach moved that the Secretary be instructed to cast the ballot of the House of Delegates for the balance of the nominations presented by the nominating committee. Motion seconded and carried. The ballot was cast as directed and the President declared the rest of the report of the nominating Committee adopted and the Doctors whose names had been read elected to the several positions indicated.

The Finance Committee reported recommending the payment of the following bills,

| | | |
|---|----------------------|---------|
| T. M. Throckmorton, Councilor | 8th District, | \$ 5.00 |
| G. C. Moorehead, Councilor | 11th District, | 7.50 |
| J. W. Cokenower, Councilor | 7th District, | 5.00 |
| Ira K. Gardner, Councilor | 4th District, | 2.60 |
| C. A. Boice, Councilor | 1st District, | 18.35 |
| G. E. Crawford, Councilor | 5th District, | 3.80 |
| H. C. Eschbach, Councilor | 6th District, | 3.75 |
| Thos F. Duhigg, Public Policy & Legislation, | | 46.55 |
| C. A. Boice, Assistant Editor & advertising manager, | | 54.60 |
| W. B. Small, salary and expenses, | | 194.95 |
| Programs and Badges, (Woodford and Ainsworth.) | | 37.00 |
| J. W. Osborn, salary and expenses, | | 745.03 |
| Plymouth Congregational Church, Building for use of Convention, | | 75.00 |
| Miscellaneous expenses, | | 41.15 |

The Treasurer's report was carefully examined and found to be correct.

Signed,

J. L. Augustine,
 J. E. Luckey.

Moved and seconded that the report be approved and that warrants be drawn for the amounts indicated. Carried.

Dr. Max Emmert moved that the retiring President appoint a Committee of five to investigate the status of Medical Education in Iowa which committee shall make a full report to the House of Delegates at the Annual Session of the Iowa State Medical Society in 1914.

Motion seconded and carried.

The report of the Committee on Constitution and By-Laws was next taken up. The first amendment proposed being to strike out of Section 8 of Chapter VIII of the By-Laws, the word one dollar and insert the word two dollars. Moved, seconded and carried, and the amendment was declared adopted.

It was moved and seconded to amend Section 1, Chapter IX of the By-Laws as follows: strike out the words "three dollars" and insert the words "four dollars." Motion carried and the amendment was declared adopted.

It was moved and seconded that the following provision be added to Chapter I, of the By-Laws to be known as Sec. 6. "Provided that if the annual report and the payment of dues of any component Society is not received by the Secretary of the State Society for two consecutive years then the charter of that Society shall be automatically revoked, and the Secretary of the State Society shall notify the Secretary of such Society to that effect." Motion carried and the amendment was declared adopted.

Moved and seconded that Chapter I, Sec. 2 of the By-Laws be amended to read "Secretary or Treasurer" instead of "Treasurer." Motion carried and amendment was declared adopted.

Moved and seconded that Chapter II of the By-Laws be amended by adding the following to be known as Sec. 3 of Chapter II. "The fiscal year of this Society shall be from April 1st, to the following March 31st." The Secretary moved as a substitute that "The fiscal year of this Society shall be the calendar year." Motion seconded and after discussion by Drs. Emmert, Crawford, Small, Osborn and Duhigg, the motion to amend was put and carried. The original motion was then put and carried and the President declared this amendment as amended by the substitute carried.

Dr. Small moved that the amendment proposed to Chapter IV, Sec. 9 be laid on the table. Motion seconded and carried.

Moved and seconded that Chapter VI. Sec. 3, be amended as to read as follows. "The Treasurer shall give bond in the sum of \$5,000.00 such bond to be procured from some reliable security Company and to be approved by the Board of Trustees. The expense of procuring such bond to be paid by this Society. Said bond to be held by the Board of Trustees. All surplus money in the hands of the Treasurer shall be placed at interest in some bank approved by the board of trustees, and such interest shall be turned into the treasury of the Society. The Treasurer shall demand and receive all funds due the Society from the Secretary, together with the bequests and donations. He shall pay money out of the treasury only on a written order of the President counter-signed by the Secretary and approved by the board of trustees. He shall subject his accounts to such examination as the House of Delegates may order, and he shall annually render an account of his doings and of the state of the funds in his hands. He shall charge upon his books the assessment against each component Society as the end of the fiscal year; he shall collect and make proper credits for the same, and perform such other duties as may be assigned to him." Motion carried and amendment was declared adopted.

Moved and seconded that Chapter VI. Sec. 4 be amended as proposed by Committee on Constitution and By-Laws.

Sec. 4. (a) Insert after the word "Treasurer" and before the following word "and" this sentence, "and he shall collect all assessments against each component Society." (b) The following sentence to be appended to the last sentence of this section, "and shall be paid quarterly." Motion carried and amendments were declared adopted.

Moved and seconded that Section 5 be added to Chapter VI., as proposed by the Committee on Constitution and By-Laws. Sec. 5. "The Board of Trustees shall have charge of the property and financial affairs of the Society." Motion carried and the amendment was declared adopted.

Moved and seconded that Chapter VII. Sec. 2 be amended as fol-

lows. The last sentence to be amended so that following the word "imposed," and before the word "shall" this sentence shall be inserted. "Having been approved by the Board of Trustees." Motion carried and amendment was declared adopted.

Moved and seconded that Chapter VIII Sec. 5 be amended as follows. Sec. 5. Amend by striking out the word "consisting" and substituting in lieu thereof the words "shall consist." Motion carried and amendment was declared adopted.

Moved and seconded that Chapter VIII. Sec. 7. be amended as follows. Amend the first sentence so that it shall read, "The Committee on Arrangements shall consist of the Committee on Scientific work and two members elected by the Component Society in the territory in which the annual session is to be held." Motion carried and amendment was declared adopted.

Moved and seconded to amend Chapter VIII. Sec. 8, as follows. Amend by appending the following to the last sentence, "And approved by the Board of Trustees." Motion carried and amendment was declared adopted.

In the proposed amendment to Chapter IX. Sec. 3. It was moved, seconded and carried that the words "on a call of Ayes and Noes" to be stricken out. Moved and seconded that the amendment to Chapter IX. Sec. 3, as amended, and reading as follows, "All motions or resolutions appropriating money shall specify a definite amount or so much thereof as may be necessary for the purpose indicated, and must be approved by the Board of Trustees before presented for final action to the House of Delegates," be adopted. Motion carried and the amendment was declared adopted.

In the proposed amendment to Chapter IX to be known as Sec. 4 by general consent the word "actual" was omitted and on motion of Dr. Emmert. which was duly seconded and carried the words "order of the President, counter-signed by the Secretary" were changed to read "Order of the Secretary, Counter-signed by the President." The proposed amendment was amended to read as follows. Sec. 4. "The necessary expenses of conducting the business of this Society during the interval between the Annual Sessions, on approval by the Trustees, shall be paid by the Treasurer on a written order of the Secretary, counter-signed by the President, and a report of said expenses and expenditures shall be made by the Secretary at the Annual meeting of the House of Delegates," was on motion made and seconded duly adopted.

Moved and seconded that Chapter XII. Sec. 9 be amended so to read "A physician living near a County line may hold his membership in that Society most convenient for him to attend provided no objection is made by the Society in whose jurisdiction he resides." Motion carried and amendment was declared adopted.

Moved and seconded that the sixth recommendation of the same committee on Publication adopted May 18, 1911, be amended by appending the following provision. "Salaries and expenses to be paid by the Treasurer on a written order of the Secretary Counter-signed by the President, when authorized by the Board of Trustees." Motion carried.

Moved and seconded that the sixth recommendation of the same report be amended by appending the following "and that expenses accruing therefrom shall be paid quarterly by the Treasurer on a written order of the Secretary counter-signed by the President, when authorized by the Trustees." Motion carried.

Dr. Emmert moved that the report as amended be incorporated into the By-Laws and be known as Chapter XIV, and that each recommenda-

tion be numerically classified as a Section. Motion was seconded and carried, and declared duly adopted.

The amendments to the Constitution and By-Laws proposed by Dr. Rendleman were laid over until next year.

Dr. J. A. Dale of Woodbury County presented the following amendment to be added to Chapter VIII. Sec. 8, of the By-Laws. "Any member of this Society not wishing to avail himself of the aforesaid medical defense is not required to pay his assessment nor to be party there-to." Laid over under the rules until next year.

Moved by Dr. Small and seconded that the action taken yesterday in regard to the Attorney's retainer fee be reconsidered. After discussion the motion to reconsider was adopted.

Dr. Small then offered the following substitute. "That the Medico-Legal Committee be instructed in making contracts with their Attorneys as follows: that when the Attorney's fees including the retainer fees amount to \$2,000.00 that \$300.00 be deducted therefrom." "Moved and seconded that the substitute be adopted, discussed by Drs. Duhigg, Augustine and Small. Motion put and carried.

Moved by Dr. Emmert that the Secretary be instructed to have copies of the Constitution and By-Laws as amended printed and distributed to the County Secretaries. Motion seconded and carried.

Dr. Voldeng propounded the following: "Does the House of Delegates of the Iowa State Medical Society favor the plan to automatically extend the membership in the A. M. A. to all county members without the payment of any fees or dues to the said A. M. A."

Dr. Duhigg moved that it is the sense of this meeting that the present plan of membership be maintained, and that membership in the American Medical Association, without payment of fees or dues should not be extended automatically. This motion was seconded by Dr. Small and after discussion by Drs. Duhigg, Small, Boice, Fairchild, Voldeng, it was put and lost.

Dr. Powell presented the following resolution, which on motion made and seconded, was adopted.

Whereas: The international congress of Medicine meets in London in August, 1913, and Whereas: It is both desirable and profitable for the Iowa State Medical Society to be properly represented at said congress, therefore Be it Resolved: That the President be empowered to appoint any member desiring to attend said congress as a delegate from this Society provided said applicant shall be a member in good standing and one who in the judgment of the President is otherwise qualified to properly act in such capacity.

Dr. Duhigg presented the following resolution: "Resolved that the President-Elect shall appoint a Committee of five, two of whom shall be women, to be known as the Committee on Public Health Education of the Iowa State Medical Society," and moved its adoption, motion seconded and carried.

Dr. Voldeng presented the following resolution: "That the chairman of the Committee on Arrangements, each year hereafter, be instructed to purchase at the expense of the Society, an ebony gavel, suitably inscribed, and present the same to the President-Elect," and moved its adoption. Motion seconded and carried.

Dr. Boice moved that a committee of three be appointed by the President to confer with the State Librarian for the purpose of establishing a State Medical Library. Motion seconded and carried.

Dr. Small moved that this House of Delegates does not approve of the uniform transfer of membership proposed by the American Medical Association for county Societies and that our delegates be so instructed. Motion seconded and carried.

Moved and seconded that the House of Delegates adjourn. Carried.

BOOK REVIEWS.

Differential Diagnosis of the Diseases of the Nervous System. Analytical and Semeiological Neurological Charts, By Henry Hun, M. D., Professor of the Diseases of the Nervous System In the Albany Medical College. The Southwell Company Publishers, Troy, New York. Price, \$4.00.

This book is an attempt to make the diagnosis of Nervous diseases not only plain for the neurologist, but also simple and easy for the general practitioner. It consists of a series of diagnosis charts. On one side of the chart is an important symptom, such as motor paralysis, to be analyzed: on the other this symptom occurs. Between these two extremes, the beginning and the end of the diagnosis, are inserted a series of tests constituting the examination of the patient. By these tests all the possible diseases are divided into naturally related groups, which with each additional test grow smaller, until the actual disease in any given case is revealed. And the important diagnostic symptoms of nervous diseases are thus treated in charts. The same disease appears upon many charts and can thus be traced and identified by starting with any one of its prominent symptoms. The diagnosis can therefore be checked and made more certain by arriving at it through the use of several charts.

It does not replace in anyway the actual observation and examination of patients. It rather points out the simplest and most direct line for the examination, and in so doing leads to the diagnosis. This method is the same as that employed in practical, elementary clinical teaching by the best teachers, but has never before been presented in book form.

Presenting, as the author does, the predominating symptom in the foreground and analyzing in a rational manner therefrom, it places this difficult but most interesting field within easy reach. The tables are so arranged that it is easier to follow the right diagnostic course than not. The pages are large size, large type is used, and there is no eye strain in reading.

We most heartily commend this book as a most valuable one in the study of nervous phenomena. It is a radical departure from the common place text book.

The Operating Room and Patient—By Russell S. Fowler, M. D., chief Surgeon First Division German Hospital, Brooklyn, New York. Third Edition. Rewritten and Enlarged. Octavo Volume, 611 pages, with 212 illustrations. W. B. Saunders Company. 1913. Philadelphia, London. Price \$3.50, net.

This is a book for the general surgeon, the general practitioner interested in hospitals, and for nurses working in hospitals, not only for those interested in hospitals, but those having to do with operative surgical cases.

Two chapters are devoted to the operating room and the preparation of instruments and supplies. The operating requirements are described in detail and the duties of the nurses fully defined. The preparation of solutions, instruments, gloves, caps, gowns, drainage tubes, sponges, etc., receive full consideration. A chapter is devoted to bandaging; one chapter each to pre-operative preparation, and the primary

dressings to general consideration in the after-treatment and to the care of wounds. These six chapters are of special interest to nurses engaged in operating room service. It would be of the greatest advantage to the surgical service of every hospital if the staff would see to it that a copy of this book was placed in the hands of the operating room nurses for their special study, particularly in the smaller hospitals which have no regulations as to who operates. The remaining portion of the book appeals more to the surgeon himself, and contains many valuable suggestions and directions to the occasional operator who finds it necessary to refresh his memory from time to time as to the most approved methods of management of the class of cases which he does not see often.

The Surgical Clinics of John B. Murphy, M. D., at Mercy Hospital Chicago, Vol. 2, No. 2. (April 1913.) Octavo of 171 pages, illustrated. Published Bi-Monthly. Price per year: Paper \$3.00; Cloth \$12.00. W. B. Saunders Company, Philadelphia, London.

In this number there are seven papers on stomach and intestinal surgery, five on bone surgery, and the remaining cases are of an interesting variety; one, a case of chronic bursitis of fourteen years standing which had been subjected to a variety of surgical procedures with only temporary results on account of a correct diagnosis not having been made, and appropriate treatment employed. The stomach and intestinal cases were not unusual in character; they are not reported as such but more for the purpose of calling attention to certain points in diagnosis, and the most rational and direct method of treatment. Dr. Murphy is always the teacher and can see the points wherein the greatest impression can be made upon a student.

A Treatise on Massage, theoretical and practical; its history, mode of application and effects, indications and contraindications, with results in over 1500 cases, by Douglas Graham, M. D., Boston, Mass., J. B. Lippincott Company, Philadelphia, 1913.

This is a book of considerable value to all practitioners. The directions for the application of massage are practical and clearly expressed. Massage is a branch of medicine too much neglected and has resulted in a great crop of quacks. All practitioners should know the essentials of massage and not be afraid to apply it. It helps many a difficult case.

Dr. Graham embodies herein his experience in a great number of cases and draws therefrom most helpful lessons. The language of the text holds your attention.

We commend in particular Chapter IV, in the physiological effects of massage; and Chapter XX, on massage in bruises, sprains and dislocations, indeed every chapter is worthy of study. A very valuable book.

Vaccine and Serum Therapy, including also a study of infections, theories of immunity, specific diagnosis and chemotherapy, by Edwin Henry Schorer, B. S., M. D., Dr. P. H. late assistant Rockefeller Substitute for Medical Research. Second edition, entirely rewritten and much additional matter added. C. V. Mosby Co. St. Louis, 1913. Price \$3.00.

Now that so much attention is being paid to vaccine therapy, it is well to have an authoritative monograph for reference.

The author presents the subject in an attractive manner, the illustrations help materially to impress the lesson.

The arrangement of the various chapters is conducive to easy reading.

It is a book which merits careful study in order that such a valuable adjunct as vaccine therapy may not be either over-rated or under-rated.

Bulletin of the Society of Medical History of Chicago. Vol. I. No. 3.

We have on previous occasions called attention to the work of this society. In this number there are biographical sketches of Dr. Isaac N. Danforth, Dr. William Beaumont, Dr. Christian Fenger, and Benjamin Thompson (Count Rumford); also a history of Illinois College Medical School, which began its first course of lectures Nov. 1st, 1843, and for some reason closed in 1853, by Dr. Carl E. Black of Jacksonville, and a paper by Mortimer Frank, B. S., M. D., Chicago, "Medicine as Depicted in English Literature Before the Eighteenth Century".

Laboratory Methods, with special reference to the needs of the General Practitioner, by B. H. R. Williams, M. D., and E. G. C. Williams, M. D. Introduction by Dr. Victor C. Vaughan. Second Edition, 43 engravings. C. V. Mosby Co. St. Louis, 1913. Price \$2.50.

The appearance of the second edition of this monograph within the year attests its value. A very readable, practical book, giving in abundant detail the essentials of laboratory work for the general practitioner.

Transactions of the College of Physicians of Philadelphia. Third Series. Vol. 34. Philadelphia. Printed for the College.

The present volume of transactions contains the papers read before the College from January 1912 to December 1912 inclusive.

Government Reports.

Municipal Ordinances. Rules and Regulations pertaining to public health, covering the period of July 1, 1911 to Dec. 31, 1911 in all cities of the United States having a population exceeding 10,000 in 1910. Reprint No. 121 from the P. H. reports.

Mortality Statistics, 1911. Bulletin No. 112. General death rates. Specific and standardized death rates. Infant and child mortality. Causes of death. Bureau of the Census, Department of Commerce.

The Friedmann Treatment for Tuberculosis. Reprint of the present status of its investigation by a Board of officials of the P. H. Service. Reprint No. 120 from P. H. reports.

Pellagra, a report on its epidemiology by R. M. Grimm, P. S. A., reprint No. 120 from P. H. reports.

Typhoid Fever at Albany, N. Y., by Theodore Horton. Reprint No. 128 from P. H. reports.

Epidemic Cerebrospinal Meningitis, by R. H. von Ezdorf. Reprint No. 124 from P. H. reports.

Water and Ice supplied by Interstate Carriers. Reprint No. 126 from P. H. reports.

Soil Pollution, reprint No. 127 from the P. H. reports.

SOCIETY NOTES.

Summer Meeting of the Iowa and Illinois Central District Medical Association at the Outing Club, Davenport, Iowa, Thursday, July tenth.

Officers.

President, W. W. Adams, Atkinson; Vice-President, P. A. Bendixon, Davenport; Secretary, L. W. Littig, Davenport; Treasurer, F. H. First, Rock Island.

Dinner was served in the Club Dining Room at five-thirty, to all members.

Program At 2:30 Sharp.

1. Nephritis and Eclampsia in the Light of Fisher's Edema Theory
(15 minutes) Geo. E. Decker, Davenport.
2. Leprosy as seen in the Hawaiian Islands
(15 minutes) F. H. Gardner, Moline.
3. President's Address W. W. Adams, Atkinson.
4. The Principles of Infant Feeding Isaac A. Abt, Chicago.
5. The Crucial Point in Rural Hygiene H. B. Favill, Chicago.
6. Experimental Study of Sodium Bicarbonate and Allied Salts in Shock M. G. Seelig, St. Louis.
7. Subacromical Bursitis, lantern slides (10 minutes) L. W. Littig, Davenport.
8. Pernicious Anemia W. L. Bierring, Des Moines.

The Des Moines Valley Medical Association held its 42d Annual Session at Ottumwa, June 5th, 1913, with a very good attendance. The program was;

- | | |
|---|-------------------------------|
| A Plea for the Old Man, | Dr. D. C. Brockman, Ottumwa. |
| Presidents Address | Dr. J. W. Osborn, Des Moines. |
| Claims Against Physicians for Malpractice . | Dr. D. S. Fairchild, Clinton. |
| Kinks and bands in Ilio Coecal Region | Dr. M. F. Moore, Martinsburg. |
| Potential Cancer, | Dr. C. A. Boice, Washington. |
| Acute Ilio Colitis in Children ^M , | Dr. J. F. Gaumer, Fairfield. |
| Tuberculosis—Importance of Early Diagnosis | Dr. J. H. Peck, Des Moines. |
| Pneumonia in Children | Dr. F. M. Fuller, Keokuk. |
| Difficulties in Diagnosing Surgical Diseases of the Abdomen with report of a case . | Dr. Geo. F. Niblock, Derby. |

The officers for the next year are ; Dr. F. M. Fuller, Keokuk, President; Dr. C. A. Boice, Washington, 1st, Vice President; Dr. G. F. Niblock, Derby, 2nd, Vice Pres.; Dr. F. W. Bowles, Ottumwa, Secy-Treas.; Drs. J. S. Gaumer, Fairfield, R. T. Shahan, Eddyville, and H. W. Vinson, Ottumwa, Censors.

A testimonial dinner was given to Dean William Wilson Pearson by his colleagues of the Medical Faculty of the Drake University at the

Chamberlain Hotel, June 2nd, 1913. Dr. A. C. Page acted as toastmaster, and the following toasts were responded to.

Doctor PearsonThe Student.
 Dr. Frank E. Ely.

Doctor PearsonThe Teacher
 Dr. Paul E. Lineback.

Doctor PearsonThe Dean.
 Dr. Walter L. Bierring.

Doctor PearsonThe Man.
 Dr. Oliver J. Fay.

Doctor PearsonThe Physician.
 Dr. H. A. Minassian.

Doctor PearsonThe Friend.
 Dr. James Taggart Priestley.

At the close Doctor Priestley with a few well chosen words presented Doctor Pearson with a loving-cup as a further expression of the high regard in which he was held by his colleagues.

The dinner was attended by 41 physicians. The evening was spent in a most enjoyable manner.

The Wright County Society met in Belmond, Tuesday afternoon May 27th. A short program was arranged for.

Dr. Kenefick of Algona gave a very interesting talk on the organization of County Societies. Our Society had been dormant for about a year and the real object of this meeting was to wake the members up and see if it were not possible to have some live meetings again. Dr. Kenefick's talk was a very beneficial one for us and a number of good points were brought out in reference to means of keeping up the interest in the County Society.

Dr. McGrath of Eagle Grove gave a short report of the State Meeting.

Dr. Best of Clarion read a very interesting paper on Tetanus, and reported a case that had just recovered.

The paper was freely discussed by all of the members. Before adjourning the Society decided to invite the Humboldt and Hamilton County Societies to meet with us in Eagle Grove in the early part of September.

After adjournment the Belmond physicians invited us to the Hotel Rule, where an excellent meal was served to us. All present agreed that this had been a very profitable meeting." E. D. Tompkins, Secy.

Scott County Society on May 5th, had the following program:
 Management of Pregnancy,

Dr. Walter Matthey, Davenport.

Kidney Stone Surgery,

Dr. H. L. Kretchmer, Chicago.

Demonstration of Pulmoter,

Dr. J. T. Haller, Davenport.

On June 3rd, the same Society had for its program:

Cystoscopic Diagnosis,

Dr. R. A. Weston, Des Moines.

The open treatment of Fractures,

Dr. Nelson M. Percy, Chicago.

These papers were demonstrated by lantern slides and followed a dinner at the New Kimball where the members of the Scott County Society had the opportunity of meeting the essayists.

The Iowa County Society on May 22, At Victor, held its 27th Semi-Annual meeting, beginning at 2:30 P. M. Program:

A Symposium on the Superior Right Quadrant of the Abdomen.

Anatomy Dr. E. C. Long.

Discussion, Drs. H. J. Jones, L. B. Amick.

Physiology Dr. McManus.

Discussion, Drs. T. J. Shuell, W. H. Martindale.

Pathology Dr. Chas. F. Noe.

Discussion, Drs. A. C. Moon, E. B. Henderson, Wm. Moershel.

Diagnostic Difficulties of the Superior Right Quadrant of the Abdomen Dr. Clarence Van Epps, Iowa City.

Discussion, Drs. E. N. Brown, C. H. Herrmann..

Treatment Dr. G. F. Schug.

Discussion, Drs. J. L. Augustine, B. Harrington.

The Freemont County Society had on June 4, at Thurman, beginning at 2 P. M., the following program:

Report of a case of Strychnine poisoning,

Dr. Harold Cole, Thurman.

LaGrippe,

Dr. S. C. Hatton, Riverton.

Pathological Labor,

Dr. B. B. Miller, Tabor.

Some observations of Urinary Analysis and Blood Pressure,

Dr. C. E. Hoover, Hamberg.

Impressions received at the recent state meeting at Des Moines,

Dr. Harold Cole, Thurman.

Marion County Society on June 12, held an all day's session at Pella. The morning session was opened by an address of welcome by Hon. H. Johnson, Mayor of Pella, with a response by Dr. E. R. Ames of Knoxville. The rest of the morning session was taken up with business, After a banquet at 1:30, given by the business men's Association of Pella, the following program was heard.

Variola

Dr. C. A. Ayers, Peoria.

Suppurative disease of the middle ear,

Dr. E. R. Ames, Knoxville.

Intestinal Autointoxications,

Dr. C. M. Harrington, Knoxville.

The Scott County Society met at Hotel Kimball Davenport, July 1, at 8:00 P. M.

Program: 1. Cardiac Arythmia,—Dr. G. E. Decker, Davenport. 2. Some Simple but Important Things Often Badly Done,—Dr. L. W. Littig, Davenport. 3. The Treatment of Rectal Fistula,—Dr. John R. Pennington, Chicago. 4. Report of Delegate,—Dr. Wm. H. Rendleman, Davenport. Refreshments were served after the meeting.

At the May meeting of the Polk County Society, held May 27, the program was:

Iodides in Cerebral Syphilis Dr. Edward R. Posner.

Puerperal Fever Dr. G. A. Field.

Dr. E. H. Knittle, of Waterloo, is spending a period of six weeks at the Manhattan Eye and Ear Infirmary in New York City.

THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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ASSISTANT EDITOR AND SECRETARY

J. W. OSBORN, M. D. Des Moines

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Vol. 3.

Clinton, Iowa, August 15, 1913.

No. 2.

ORATION ON MEDICINE

Iowa State Medical Society.—1913.

R. L. CLEAVES, M. D., Cherokee.

Mr. President; Members and Visitors of the State Medical Society of Iowa:

I am profoundly grateful for the honor conferred upon me, by your committee, in inviting me to deliver the Oration on Medicine, and I know of no reason why they should have so acted, unless it be, that I fairly represent the type of older physicians who, in a quiet way, have followed the practice of their profession for nearly half a century. Nevertheless, I feel my inability to do the subject justice for medical knowledge has made such tremendous strides in scientific investigation, within the past few years, that it is almost impossible to keep pace with the advancement.

The Twentieth Century, though yet young, has already been called the health age; few decades in history have shown greater progress than have the past ten years in the application of scientific knowledge and discovery to the problems of health.

Every branch of medicine is being explored, not alone in this country, but throughout the civilized world, by which large and rich stores of knowledge are being garnered for our use. Medical schools and universities are aiding in the scientific advancement; medical literature and associations are means of disseminating knowledge, valuable and potent to the profession.

Authorities in medicine of earlier days should not be ignored or too lightly valued, although many of their conclusions were incorrect; many of our theories are in the testing stage, and future scientists may smile at us.

The microscope and laboratory, and many other inventions, have made the practice of medicine more scientific and certain, and have removed from it the theories and guess work of the past. The biological laboratories alone could furnish all the material for one full section, and then only touch incompletely upon the subject.

Improved methods of study have given impetus to clinical research which leads to the solid ground of experience; whereas in former times the practitioner leaned more heavily upon the authors, and the authors leaned upon the combined experience of the past, unaided by scientific investigation.

The use of serums and vaccines has revolutionized both diagnosis and treatment, while the theory is still in its infancy. Can there be any doubt regarding the value of small-pox vaccine, diphtheria anti-toxin, tetanus anti-toxin, and typho-bacterin? Surely the evidence in their favor is overwhelming. Many other serums are coming into use, but as therapeutic agents their value has not as yet been fully established.

It is well to remember that bacterial vaccines are toxic products, capable of good or harmful results, and a wise discrimination should be made in their use; neither should they be prescribed on the recommendation of a trade journal, as it is irrational to advise the use of vaccines without the preliminary bacterial knowledge first necessary, and to disregard other possible causes.

The results following the use of typho-bacterin, in the prevention of typhoid fever, is one of the most important discoveries of the age, equally valuable as a therapeutic or prophylactic agent, yielding excellent results in both hospital and private practice.

The Surgeon General of the United States Army says, "The investigation that has been made on artificial production of immunity for the prevention of typhoid fever, has and is giving remarkable results." Dr. Fuller, Assistant Surgeon General gives these facts which show that during the year 1911 there were eighty thousand persons vaccinated in our army; of these there were twelve cases of typhoid fever, and one death, had it not been for the prophylactic immunization there would have occurred the prevalent rate of incidence which would have been about two hundred and fifty cases. The British Colonial Army has a record similar to this in point of vaccinations, and in the number of cases of fevers and deaths.

Two questions are asked about anti-typhoid vaccines says Dr. Fuller. First, what is the duration of immunity? Second is it absolute? The answer is made by observation in the British Army, that the immunity begins to weaken in two and one-half years, but investigation also proved that after five years the rate per thousand among the inoculated was only one-fourth that of the unprotected troops. Regarding vaccination in our army and hospitals, Dr. Fuller

says, "though the immunity is not absolute, the general effectiveness of the measure has been clearly demonstrated." Viewed in the light of recent experience on the Mexican border it is perfectly apparent that the troops owed their freedom from typhoid to the prophylactic treatment received before the campaign begun.

Massachusetts General Hospital and also the New York City Hospital have demonstrated that typho-bacterin can be freely used to immunize schools, families and communities that have been exposed in epidemics. This new branch of medicine is already established on a firm foundation. One medical authority has said that surgery has secured the place once occupied by medicine; immunology is opening the door to the medical profession, giving it a chance to be restored to its original position of prestige, and I believe it safe to predict that the future doctor will be an immunizer.

The recognition of disease and its correct diagnosis and treatment is the aim of the physician, but another equally important branch is sanitary science or preventive medicine, and the benefits conferred upon mankind, through the advance of knowledge in regard to the causes of disease, and the conditions necessary for health, especially in communities and cities have been obvious, great and numerous.

The minute directions of daily life contained in the Mosiac Code were based upon the views then prevalent in regard to hygiene; neither was this science wholly unknown to the rulers of Greece or Rome as is seen by their drainage, and sewerage systems, and the appointment of state physicians.

During the middle ages little progress was made along this line. In the city of London between the seventeenth and nineteenth centuries, such a vast improvement occurred in regard to mortality that Macaulay in his History of England paused to note the triumph from plague, small-pox, scurvy and dysentery.

To France is due the credit of first giving definite form to this science, and many French writers are numbered as contributors to literature on the subject, which found similar expression throughout Europe. Public hygiene had its later lights in Great Britain in Chadwick, Florence Nightengale and others. In America two able writers to promote this beneficent movement were Dr. Benjamin Rush, and Prof. Robley Dunglison, and in the later part of the nineteenth century public hygiene became recognized as a science of great intrinsic importance. In our country modern sanitary science can best be shown in the report from the Canal Zone which for four hundred and fifty years had been considered the most unhealthy locality in the world.

Dr. W. C. Gorgas, Chief Sanitary officer of the Isthmus, presented a most interesting address before the Commencement Ex-

ercises at Johns Hopkins University, from which I gather the following facts.

It is interesting to note the improved conditions resulting from sanitary science in the control of disease, especially in yellow fever and malaria, between the time of the failure of the French Company, and the undertaking of the work by the Americans in 1904. During this interval two great discoveries had been made, one by Ronald Ross, a surgeon in the English Army, and the other by Walter Reed, surgeon in the United States Army. These surgeons found that yellow fever and malaria were conveyed from man to man from the bite of the female of a particular species of mosquito.

It is to the honor of the medical profession that by these discoveries, yellow fever has wiped out and malaria largely controlled in the tropics. The favorable sanitary results by the United States at Havana warranted the same work in the Canal Zone which it is said has rendered it as habitable as any part of the United States.

During the construction period the French, with an average force of ten thousand employees lost from death twenty-two thousand, while we with an average force of thirty-three thousand, during the same length of time, lost four thousand.

The general health conditions of the Zone have so improved that the employees are rugged, and healthy looking; of good color, energetic and active, they resemble more the farmer and his family of the northwest, than like people who have lived in the tropics for four or five years.

Reports have gone out through different channels that sanitation has been very expensive, while as a matter of fact, sanitation on the Isthmus, has cost only a little more than one cent per day per capita for the total population, which report is of great value to our tropical neighbors, both north and south of Panama. What has been accomplished here in this most unhealthful region can be accomplished in all cities located within the tropics. The conservation of health is everywhere obvious. In our own country, a generation has passed since the people of the south have known what it is to have their section paralyzed by contagion, and forty years since any part of the Union has been in the throes of an epidemic of cholera.

Millions of people know nothing about the ravages of violent epidemics and the stories told by early residents of Chicago, of the horrors of cholera, seem like stories of the middle ages.

Plague threatened us last year from Cuba and Porto Rico. A single infected rat got into New Orleans. Not only did this country escape the disease, but was of assistance in ridding Cuba and Porto Rico of it. Fourteen years ago our volunteer soldiers at Chickamauga and Jacksonville were laid low by the hundreds from ty-

phoid fever. The United States Army has demonstrated its ability to prevent typhoid fever so that a soldier in the army, or a sailor in the navy is much freer today from danger of typhoid than a millionaire in his mansion.

Only last spring at Memphis an epidemic was threatened, caused by an overflow which filled the water-mains with sewage. Memphis at once sterilized the water with chlorine, inoculated the people with typhoid vaccine and promptly ended the epidemic. This is a practical suggestion should conditions require it, to the health department of the cities of the Ohio Valley so recently devastated by the flood.

While we have been considering briefly and somewhat imperfectly, the art of medicine, and the hand-maid of medicine, sanitary science, noting here and there some of the important discoveries; contrasting changes, of conditions good as well as bad, we will now return to a very vital branch that deeply concerns every practitioner in the profession. Medicine and diagnosis are so closely interwoven I believe I am not digressing far when I emphasize the latter subject and call attention to the need of more thorough work on this important branch of medicine which is too often neglected. Diagnostic ability and diagnostic industry are what make the difference between the big doctor, and the little one, the good doctor and the poor one, the successful doctor and the unsuccessful one.

When a doctor knows to a reasonable certainty what is the matter with a patient, the rest is comparatively easy. Diagnosis is the super-fine art of medicine. You can memorize *materia medica*, memorize anatomy, you can largely memorize surgical technic, but when a patient comes into the office and wants to know what is the matter with him, it takes brains and study to find out. Memory won't do then. It takes skill, study and experience—experience which often comes when sitting through the quiet hours of the night at the bedside of the patient.

On diagnosis depends the treatment, and it is results that count, clinical experience that tells. In the last analysis, which spells success or failure, and it is clinical experience which is the hardest to get, which takes time, worry and sleepless nights. It is the general practitioner who makes the basis of all advance in medicine, who makes the specialist possible and desirable, and who makes the best specialist, because he has a clinical experience as a foundation.

The art of diagnosis is acquired more readily by some than by others, and to a certain degree it is the result of an innate talent that often goes astray, unless backed by knowledge.

Diagnostic ability requires a profounder knowledge, keener insight, and wiser judgement of morbid conditions than any branch of medicine. The doctor holds the life of his patient in his hand, just

as surely as does the surgeon under his knife, hold the life of his patient.

Some author has said that good diagnosticians are as rare as good surgeons. We concede the fact that we make mistakes in diagnosis, the autopsy alone revealing the cause. But while this be true we must endeavor to make as few mistakes as possible. A noticeable feature is, that these mistakes in diagnosis are not confined alone to the physicians practicing in the smaller cities or rural districts, but are made quite as often in the hurried examinations by the specialist in the cities.

Dr. Richard Cabot's report (Journal of the American Medical Association,) of three thousand cases that found their way to his autopsy table is unfavorable and undesirable information for general publication, and it has elicited considerable comment in the medical journals.

Out of this record probably a comparatively small number passed through Dr. Cabot's hands, and if there be any criticism it must fall upon the careless diagnosis of the attending physicians.

This is too crushing an arraignment on the General Hospital of Massachusetts, for which I have great reverence, to attribute all these failures to this time honored institution.

While this record is startling, and has a tendency to emphasize how liable the profession is to make mistakes, it must be remembered that many of these examinations were made by pathologists at the autopsy as against clinical diagnosis upon entrance into the hospital.

Of this varied assortment of acute and chronic cases and some improperly classified, studies by new doctors and by old, with only a few days, or possibly a few hours knowledge of the cases, it therefore would seem that to utilize this jumble in statistical record is wrong.

What the physician advocates the public will soon believe, and confidence must be established within our own ranks by the loyalty of its members.

The American Medical Association Journal of last year had in it an article bearing upon this point, under the title of "How Can We Improve Our Therapeutics?" It says in part, "Most of the instructors of our medical schools are very scientific in pathology, diagnosis and prognosis, but when they reach the realm of treatment their therapeutics are very vague, in fact, many of the instructors are skeptical and have helped to build up the distrust in the virtue of internal medication."

We are now in the field of experimental therapeutics where the action may be observed upon animals on which the diseased condition has been experimentally produced. Studies along the above line are fundamental. All our therapeutic fallacies must not be laid

to inheritance. The commercial pharmaceutical chemists are largely responsible. They have given us some valuable remedies, but as an offset they have flooded the country with pharmaceutical advertisements of their preparations that are entirely unwarrantable.

One can not write upon therapeutics without being under obligations to the masters of internal medication, and from Dr. M. De Sajous in his work on "Diagnosis" I quote the following: "I do not introduce any elixir of life; no universal panacea, not even a new serum; the weapons recommended are available to all; remedies which for years have been in daily use, forty or fifty of them that have stood the test of time. It shows, I believe, that it is not because we have been lacking agents capable of successfully coping with disease, that confidence in remedies has been steadily decreasing, but because they were used blindly or often injudiciously. There is not the least ground for doubt as to the efficiency of our therapeutic resources."

This inspirational note stimulates both faith and confidence in the profession, and its optimism is wholesome and encouraging to the practitioners, who are earnest and loyal to their high vocation.

All honor to the doctors of the past who have labored nobly and well; honor to the doctors of the present who are striving conscientiously and faithfully to lengthen human life, and to contribute in no small degree to the health, happiness and comfort of all classes of people. By skill, educated judgment, and advanced training, may the doctors of the future attain even unto higher things.

WHEN THE BLIND SEE—A CASE REPORT*

MARY K. HEARD, M. D., Iowa City.

Preventive medicine, with its wondrous results is no new thing and to-day I come again with my plea for the little people who do not see.

Much has been done to check the awful scourge of blindness through the use of the Crede' method but much more can be done by the general practitioner.

A routine examination of all children's eyes, an early diagnosis and treatment, operative if necessary, as in a cataract case, opens the door to a normal life of play and work and would close the door forever on such a story as this.

In the years since Helen Keller described her finger world I have frequently heard people say, "Wouldn't it be a delight to her if she could suddenly be made to see?" and I unhesitatingly answer, "No it would not," and Miss W's story as she told it to me will bear me out. My acquaintance with Miss W's began in 1902 while she was a student at the State College for the Blind when she

*Read before the Society of Iowa Medical Women.

was twenty-two years old and just at the beginning of her visual life and has continued to the present time. Of her life up to 22 she says: "I can never remember seeing anything, people, animals, objects were simply things I had to go around. I could tell where the windows were and could tell when something came between me and the light, and knew in the same way when an object was moving. I now know that it was like looking through a milky glass. I can remember creeping around on the floor following the spots of sunshine, they were bright and warm and I would lie in them by the hour playing with a mirror or prism, which I liked best, for it made so many kinds of brightness that I never tired of it.

I could tell when night came for the places where the light came in during the day would grow dark and a brighter spot of light would appear in one place in the room and I knew that there was a lamp or light of some sort there.

I learned to know people by their voice, odor or step and could often tell whether any of my friends were in the room and where they were even if they said nothing, my sense of hearing was so keen. As I grew older I found that by holding a book or paper near my left eye and then moving it slowly about I could tell where the dark of the large letters stopped and the white of the paper began and so I learned the outlines of a few of the large letters.

When I was ten years old, I went to school and for two terms I read without the teacher knowing I was blind. I had a good memory and would have my people read the lesson over to me at home.

I could go about alone in the neighborhood and even went to school alone, which was quite a distance from home.

I had no trouble in finding my way except in rainy weather and then I could not follow the turns for the wet walks felt so different and the sounds were all so changed by the moisture in the air, that I was easily lost.

I never learned to use my hands to feel my way about, but have always depended upon impression received through my feet and have always located things by the difference in sound showing the nearness or remoteness of objects.

I worked about the house, washed and wiped dishes, brought in wood, could dress myself, made doll clothes and pieced a quilt before going to the College for the Blind in 1894 when I was fourteen, but had never been able to comb my own hair.

After entering the College I was first taught to make my bed then to comb my own hair. In school I was put into the primary class and in two weeks I learned point, a written sign language much like shorthand, and was put into Appleton's first reader. I took all the grammar school studies, was taught sweeping, room work, fancy work of different kinds and at 19 entered high school from

which I was graduated at twenty-five. This long period was due to the operations on my eyes.

When I was but two years old my parents, who had noticed that my eyes moved constantly and that I could not see, took me to an eye specialist and were told that nothing could be done then, but to return in five years. I was ten years old before I was taken to the physician again and we were told that trouble was the result of a birth mark and that I better be sent to the school for the blind as there was no help for me. Four years later I went to the College at Vinton but it was not until I was twenty years old that I learned, after a thorough examination of my eyes by the surgeon at the college, that by a series of operations on the cataracts in both eyes I might be able to see and to go about as seeing people do."

It was two years before the consent of her parents could be gained but in January 1902 the right eye was operated on and in March, following a second operation, she was able to see. Of her experiences in this new life she says:

"While sleeping the bandages slipped and upon waking I thought something must have happened and that I was dead and it was heaven, for everything was so bright. I got up and groped my way around in this flood of light, found a piece of furniture with things on it, but did not know what the small objects were until I closed my eyes and felt, only to find they were bottles and I was standing in front of the medicine case in the nursery and not in heaven after all.

"The nurse found me and I was afraid of her for she did not look as I thought people did and a red dress she wore looked so hard and dark, not soft and pretty as my fingers had taught me.

"The bandages were replaced but the next morning when my breakfast was brought to me I peeked and when I saw the toast and eggs on my tray I could not eat, and for weeks I could not bring myself to eat anything but milk, mashed potatoes or bread, they looked clean, but toast or meat or eggs looked dirty and disgusting. I could not eat tomatoes, beets or roast beef of which I had been very fond, they were so red and hard, the looks of them sickened me.

I had great difficulty in feeding myself with my seeing eye open. I could not find my mouth but was continually hitting my face with my fork or spoon and if I attempted to reach for anything I always knocked it over for I could not measure distances.

I could not watch people eat for it looked as if they were shoveling their food into a black hole, in fact I have never gotten over my first impression about faces and even yet never look at a person if I can help it. The first faces I ever saw, after seeing my nurse when she found me with the bandages off were those of my school mates as they crowded around me when the bandages were finally

taken off, all asking at once if I could see them and how they looked?

How could I tell them that they did not look as I thought human beings looked, but were most repulsive and when they opened their mouths, I felt as if I would fall into those dark holes. Their noses were so awful being on wrong side up and so near their mouths.

When I saw the boys and men, with whom I had been associated all those years, their short hair and style of dress was so different from the picture I had built up that I felt they were total strangers. Their voices did not sound the same and the men's mustaches were abominable and looked so dirty.

When I came to go about the buildings where I had wandered at will for eight years without once being lost, four things troubled me. The floors of the halls were covered with linoleum in light and dark squares and I was constantly trying to step over those dark holes, and was in constant fear of falling into them. I could not go from room to room, there were so many doors and the only way I could find myself was by shutting my eyes.

I could not go up and down stairs without feeling afraid as the stairs seemed to be coming up to hit me just as the cracks in the floor seemed to do.

If I tried to walk with my eyes open I stepped so high every one laughed at me.

"I could not go down town alone in the day time for the shadows troubled me and I tried either to walk around them or step over them.

"I did not enjoy going for a walk as I always had done, for I was constantly dodging people fearing they would strike me, even though they were nowhere near me.

"The blades of grass seemed to hit me and I felt I must push them back just as I felt I must do when in church or any other gathering for people and objects seemed so near I thought I should smother.

"I must have been a perfect bore to my teachers and classmates for everything I saw I thought as new to them as to myself and I was always coaxing them to "come and see" or taking them to see things. A fire in the east one night was only the glow from a full moon and it was a long time before I could be persuaded that the moon had anything to do with the wonderful fire.

"My first sunrise was one glowing mass of brightness. I saw no especial color and instead of the sun's rising I felt I was being carried higher and higher and looking down upon the world, I thought the blue sky must be flowers on the trees and I wanted to climb up and pick them.

"Even in my blindness I had known bright red and blue but

with my new sight my ideas had to be changed for they looked so hard. From the first of seeing I could match up the kindergarden color blocks and am still very sensitive to slight differences in shade or tint. Colors have always been associated with voices, numbers and names. Men's voices were in brown tones, women's tan, while children's are white. All numbers have definite color, as one is brown, three mahogany, ninety-nine orange while Bertha is always buff, Mary brown and Carrie slate.

As soon as fitted with glasses I learned to read print, mastering it in two weeks. I did not begin with a primer as I should have done but taking my point books I would trace out a letter with my fingers and then study the letters in print. For this reason I do not read as rapidly as if I had learned simple words as a whole, for as yet I see words either as syllables or independent letters.

Pictures even now have but little interest for me as every thing appears flat. Trees coming out of a house roof do not look right and as yet I cannot judge distances accurately.

After using my right eye nine months the left was operated on but I did not learn to use it much for nearly two years. Whenever I wanted to see clearly I shut the left eye for the use of both troubled me, small objects appeared double and I felt uncertain where to go. I think now I must have been dizzy. I used my right eye with my reading glasses for my reading or other close work, but if I wanted to look at large things like trees or houses I would use my left one with my distance glasses. It was two years before I could keep both eyes open and move about and be comfortable. I am often asked if every minute of this new life has not been one of happiness. If they only knew the awful hours that went with all the wonderful discoveries. I would not want to live over those days and weeks again and I hope no one will ever have to suffer as I did.

"I was lost, I did not know my best friends, the old familiar rooms which had felt so home-like to me were strange. Even the ticking of the old clock did not sound natural.

"My heart beat so fast that I felt I could not breathe rapidly enough to keep up with it.

"I would go to bed in the day time hoping to quiet that awful pounding in my side and the only way I could rest was by drawing the shades and then covering my eyes with pillows. I would hope that I might go to sleep and never waken for it seemed I could never become accustomed to this strange new world.

"Then as I would be drifting off to sleep I would start up fearing that if I did go to sleep I never would waken. Evening in the house was no better for the glare of the lights was awful. I liked to go out into the night and the moonlight, away from electric lights for things looked softer, more like the gray world I had known not like the hard coarse one I must learn to know.

"I know now that I was frightened and if I had to live through it again, I would tell some one of those awful feelings which never left me during my waking hours. I supposed it was what every one who saw had to suffer. There was no joy or delight; that came later. I did not know my pet cat, and the first chicken I saw I was sure was a cat. I took a horse for a cow as I had been told that a horse was the larger. I made so many mistakes, which I know now were funny, that I refused to tell what I thought things were or to ask about things for fear of being laughed at. I persisted in throwing dresses and waists out of my closet thinking some one had hung the gaudy things with mine to torment me and it was only when my nurse made me close my eyes and feel of these things that I realized I had been throwing out clothing of which I had been especially fond in my blindness.

"My whole world had to be made over and my hands and feet and eyes did not work in harmony as my hands and feet had done, but each gave me a different impression and I was not able to combine them. So far as my feelings were concerned I was just as much lost as if I had been taken to a strange country where customs and language were unknown and I hope the day will come when because of knowledge no child will be allowed to suffer as I have done."

The experiences of this young woman might be lengthened indefinitely but enough has been given to make us as physicians realize what we have in our power to do to lessen the number of these cases. True her experiences have much of interest in them and two years after acquiring her vision she came to the University of Iowa where a series of experiments were carried on in the Psychological department and reported in *Psychological Review*, Vol. VI No. 5. Summarized their report is:—

Her sense of active touch was most acute. Her range of pitch was very wide, but what was most remarkable her color vision was far above the average. She could detect color in solutions which were transparent to others in the laboratory. She could apparently see the ultra violet rays of the spectrum. The long period of disuse had not injured the retina.

Black objects appeared larger than white, reversing the process of irradiation; for dark objects being the things to avoid in her blind days, were given larger values than white ones thus causing this reversal.

Single binocular vision was absent for she described seeing two objects, one with the right eye and the other with the left eye. Double vision is probably one of the steps toward single binocular vision with all children but they can tell us nothing of the dizziness which probably is associated with it. Her memory of what she read in print was largely dependent upon the movement of the vocal or-

gans. Solids appeared as surfaces and visual space sense and perspective were developed slightly by practice but as she says, pictures have no meaning to her even yet.

From her story and the laboratory findings we are not surprised that she was possessed by a strange feeling she could not understand, for fear does not enter into the life of a blind child, it is only the seeing child, as a rule, who is taught to fear.

For over a score of years she had participated in the life about her and had built up a world of her own, a soft gray world in which her finger tips, ears and feet had served as eyes and then to have sight given and to find that none of the mental pictures were true, left her as she says in a strange country, the very language seeming new for words came to have different meanings when sight entered into the definition.

But some of you may still say why appeal to us we are not specialists—no, but every general practitioner should know how to use an ophthalmoscope and the routine examination of every child's eyes would preclude the possibility of such a history as this repeating itself.

Early operations in cataractous cases, fusion training and refraction in strabismic cases or refraction in cases of lowered vision or eye strain will make them able to stand shoulder to shoulder with those of their years capable and ready to take their part in the world's industrial struggle all because someone took an interest in one of these little ones.

OUR EXPERIENCE WITH SALVARAN*

CLARENCE VAN EPPS, M. D., Iowa City.

Although the hopes of the discoverer of salvarsan have not been fully realized, he has nevertheless given us a drug of great efficiency. Criticism based upon the feared organotropic action of the contained arsenic has been proven to have little foundation and when properly given the drug may be used without hesitation. Finger¹ and Gaucher²⁻³ consider salvarsan therapy still to be in the experimental stage and ascribe the "neuro-recurrences" and deaths after salvarsan to arsenical poisoning. Because the "neuro-recurrences" affect principally the auditory nerve the experience of the otologist is valuable. Hugo Frey⁴⁻⁵ has collected sixty cases of inner ear involvement in syphilis before any treatment was given, the majority of which recovered under treatment. He believes that the "toxicity of salvarsan for the acoustic nerve has never been proved." By Kren,⁶ who noted "neuro-recurrences" in 4.56 per cent of two hundred and fifty-eight cases, they are viewed as symptoms of syphilis constituting no contraindication but rather as indications

*Read before the Iowa State Medical Society, 1913.

for salvarsan-mercury treatment. The deaths after salvarsan probably exceed one hundred. Leredde⁷ has collected and analyzed fifty-four cases occurring upon the continent. He considers that with few exceptions the deaths were due to faults in technic, non-observance of the contraindications and injection of hopeless cases as advanced tabes, paresis, cerebral syphilis and aortic disease. He considers the Jarish-Herheimer reaction to be the basis of some of those accidents. In a few cases death has been due to arsenical poisoning as in the case reported by Ruh⁸ in which the liver and kidneys showed changes similar to those produced by arsenical poisoning.

Salvarsan is indicated in all forms of syphilis except grave cerebral involvement and in syphilis associated with aneurism, arteriosclerosis, myocarditis, non-specific nephritis and non-specific disease of the inner and middle ear. Great caution must be used also in severe lesions of the larynx and trachea since the local reaction may suffocate. While not dangerous in paresis, tabes and spinal optic atrophy the slight hope of improvement would constitute an objection to the routine use of the drug. In syphilitic ocular disease Ramsay⁹ finds no reason to believe that salvarsan has a poisoning effect on any of the tissues. Igersheimer¹⁰ has used salvarsan in all the syphilitic eye diseases with good results, including neuroretinitis and interstitial keratitis. He remarks that no such thing as injury to the eye of the non-syphilitic by salvarsan has ever been observed.

The results obtained with salvarsan are usually prompt, the most striking and important being the clearing up of the lesions of the mouth and throat, the spirochete often disappearing within two or three days. While it is still too soon to speak of salvarsan as a cure for syphilis it is well established that the Wassermann reaction becomes and remains negative in a larger proportion of cases than in the pre-salvarsan days. In a series of one thousand cases reported by Kilroy,¹¹ most of whom received two injections, the Wassermann was negative in fifty per cent three months later. A clinical relapse occurred in twenty-six.

In a majority of cases no reaction follows the injection of salvarsan. When present it consists usually of nausea with or without vomiting, or a febrile reaction usually slight.

Between salvarsan and neosalvarsan there is probably little difference of therapeutic value. The ready solubility of the newer preparation and its almost neutral reaction renders its administration easier, and in case of perivenous infiltration, less irritating. With few exceptions the intravenous route is the preferred method of administration.

Our own conclusions are based upon sixty-five injections in thirty-seven cases, including ocular, laryngeal, cerebral, spinal and mucocutaneous syphilis. Salvarsan was used fifty-three times and neosalvarsan twelve. With the two exceptions the drug was given intravenously. Only once was the vein exposed by dissection. On three

occasions inability to make a proper puncture obliged us to postpone the injection. In possibly fifteen per cent of the injections two or three attempts were necessary. Even the blood flows freely from the needle the salvarsan may escape into the perivenous tissues causing pain which persists for a few hours to a few days. In one case a thrombophlebitis developed after a second injection into a vein used a week previously. In one case a small subcutaneous abscess developed at the point of injection. A febrile reaction of ninety-nine degrees or more followed twelve of the injections. Nausea with or without vomiting occurred nine times.

There were no deaths.

Conclusions:—

1. Salvarsan is a safe and efficient antisyphilitic in properly selected cases.
2. The intravenous is the preferable mode of administration.
3. At least three injections should be given the first month of treatment.
4. In all cases mercury should be used as if salvarsan had not been given.
5. Neuro-recurrences constitute an indication for further salvarsan administration.
6. A positive Wassermann is an indication for further salvarsan administration.

| Type. | Number. | Improved. | Unimproved |
|------------|---------|--------------|------------|
| Congenital | 1 | Not followed | |
| Tertiary | 3 | Not followed | |
| Secondary | 23 | 23 | |
| Nervous | 4 | 3 | 1 |
| Ocular | 3 | 3 | |
| Tabes | 3 | 2 slightly. | 1 |

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THE MEDICO-LEGAL ASPECTS OF FRACTURES*

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Since the establishment of Medico-Legal Defense by the Iowa State Medical Society my attention has been directed to the disproportion of damage suits arising from the treatment of fractures. Not many damage suits against physicians arise from the treatment of medical cases, by far the larger number arising from some sort of surgical intervention.

It has been estimated that one seventh of all injuries result in some form of fracture while the experience of the Medico-Legal Committee of the Iowa State Medical Society indicates that about one half of all damage suits arise from the treatment of some form of fracture. When we remember that only a small amount of the total surgery done to day has to do with the treatment of fractures we readily see that there is a widely disproportionate amount of litigation arising from the practice of this branch of surgical handicraft.

Now let us consider what may be some of the causes of this deplorable condition, and we must admit that it is deplorable because, if a physician wins a damage suit, he is still the loser because the undesirable notoriety is sure to lose him some practice that he would otherwise have had, in addition to the worry, loss of time and financial burden incident to the defense of a damage suit.

The causes are multitudinous. First among all causes is, I believe deformity and loss of function; while the physician may not be to blame for either, yet there are comparatively few cases of litigation over fractures where either deformity or loss of function is absent. Another cause is disputes over compensation and here the physician is often to blame; the patient has met with an unexpected injury and his loss of time and suffering has disturbed his mental and physical equilibrium. He perhaps is financially embarrassed, he may have lost his position or he is still unable to do a full day's work, he still suffers some pain, perhaps there is some deformity, which in time will become very much less noticeable, the impairment of function is still very considerable and while in this disturbed mental condition, he says some things uncomplimentary to the physician. The physician has perhaps been losing sleep, or perhaps some of his patients are not doing well or some one or the thousand and one little things that go to annoy a physician may have happened and he fails to handle the case diplomatically. One unpleasant thing follows another and presently a suit is started.

We should remember in these cases that the patient has suffered injury, the shock of which may have disturbed his normal mental

*Presidential Address, Des Moines Valley Medical Association, Ottumwa

balance, he has absorbed the products of nature's efforts to repair the injury, his elimination has perhaps been faulty, his confinement consequent to the injury has been irksome, he has perhaps suffered business losses in consequence of his inability to look after his affairs. All of these in addition to the deformity, neuritis, adhesions around the joints, the ankylosis bony or otherwise which may occur and the atrophy of muscles, due to disuse, render every case of fracture a menace to the physician who is called on to treat it.

Many fractures have a natural tendency to complete functional recovery but many others either from the nature of the injury or their location have a tendency to recover with more or less deformity and many times with a varying degree of loss of function. The deformities may be caused by destruction of bone, by failure to secure apposition with or without shortening, by angulation, by separation of the fragments due to pulling apart as in fracture of the patella, the os calcis, or the olecranon. Many of the deformities are due to the nature of the injury but it is too often true that they are due to lack of proper care on the part of the surgeon; this may be due primarily to lack of skill, but more often, I fear, it is due to a failure to appreciate the seriousness of the injury and to a lack of the pains-taking care at the time of the injury and afterwards necessary to carry these cases to a successful termination.

Some of the fractures that are more apt to be followed by deformity and loss of function are fractures at the lower end of the radius, near the elbow, near the knee, near the ankle, and near the shoulder or hip joint.

Now let us see what happens in that class of fractures that we name after the Irish Surgeon Colles. In a simple uncomplicated Colles' fracture there is some backwards displacement and rotation which when corrected shows little tendency to recur and gets well with very slight deformity and with no permanent loss of function, with almost any kind of retention apparatus. Unfortunately many of these injuries are not the simple type just mentioned. The fragments may be impacted with condensation of the cancellous bone or there may be great comminution of the lower fragment with condensation of the cancellous structure of the upper fragment and frequently there is the complication of fracture of the styloid process of the ulna. It is only since the use of the Roentgen ray has become common that we have fully realized the frequency of comminution and other complications of injuries in this region. If any of the last mentioned conditions exist our Colles' fracture is no longer a simple one and in many cases considerable deformity will result and with the deformity there may be a greater or less impairment of function.

But taking into consideration all the complications that may result, I am still forced to the conclusion that in many cases the fracture has never been reduced, and that the deformity is the direct re-

sult of the lack of skill, or carelessness and indifference of the attending physician.

One of the causes of loss of function in this particular type of injury, is the too tight application or too long use of retentive appliances resulting in neuritis and tenosynovitis. In fact we see cases in which the functional result would have been better if no appliance of any kind had been used because the appliances were so tight and worn so long that pressure paralysis or inflammation of the tendon sheaths has developed and more or less permanent injury has resulted.

Passing upward to the elbow we find a series of injuries that tax our skill and patience to the utmost, and if this is true of the experienced surgeon, what must these injuries be to the physician who is inexperienced? For instance suppose we have a fracture of the radius just below the insertion of the biceps. The upper fragment is pulled upwards and rotated outwards, the lower one is rotated inward, and in many of these cases no amount of manipulation will bring the ends in apposition. Without operative intervention little can be done.

Fractures of the humerus have a very great capacity for making the surgeon trouble, from fractures near or through the condyles, where we have to fear gun-stock deformity, excessive callus extending into the articulations, to fractures near the middle of the shaft where injury to the nutrient artery may result in non-union, or excessive callus formation may catch the musculospiral nerve, and in fractures of the neck where we may expect non-union. I have in my possession the upper end of a humerus that shows bony union of a fracture of the anatomical neck. This specimen is from a patient who forty-six days after receiving a fracture of the anatomical neck of the humerus, died from other causes. Macroscopically the repair is complete.

Passing to the lower extremity, we expect faulty union and permanent impairment of function in fractures of the neck of the femur yet some cases of fracture of the anatomical neck eventually show bony union. Below the trochanters there is comparatively little excuse for failure to secure good results in fractures of the femur.

In fractures of the tibia certain locations are apt to be followed by some sort of unsatisfactory result, e.g. fractures through the head of the tibia while very rare are likely to not unite well and you all know how troublesome a Potts' fracture may be especially if it be compound.

While the fractures enumerated, by no means, include all fractures that are prone to make us trouble through deformity or loss of function, yet they are the principle ones. Now if there are no sug-

gestions that will lessen the trouble of both, the patient and physician, then this paper had better not have taken up your time.

I have these suggestions to make. First let more care and attention be given to diagnosis. We all know every year of some cases of incorrect diagnosis and if every such undiagnosed or wrongly diagnosed case that occurs in Iowa every year could be reported and all of them tabulated it would make an astonishing exhibit. The diagnosis of all but the most obscure fractures should be made with great accuracy if only enough time and attention be given.

Displacement, preternatural mobility, crepitus, localized tenderness and loss of function are the signs upon which we may rely, except in a few cases to be mentioned in a moment. To deal with fractures we must first educate ourselves to recognize displacements, i. e. in addition to our book knowledge of land marks we must educate the hand and eye to detect obscure variations from the normal. This implies a thorough knowledge of the land marks, and of the bony outlines, and of the relations of the normal body.

The recognition of mobility is often not easy and calls for careful education in palpation.

Bony crepitus when present proves fracture, but crepitus cannot always be elicited and then the crepitus from inflamed synovial sheaths or from injured cartilage may be confusing.

Loss of function is usually complete but cases have been known to walk considerable distances with an impacted fracture of the tibia or neck of the femur.

Pain is the most constant symptom but as it is also present in other injuries it may be very misleading, still a definitely localized point of pain, or pain produced by distant pressure or by pressure in the long axis of the bone is very suggestive.

But by taking into consideration all the cardinal symptoms; by careful palpation and manipulation, by comparison with the corresponding uninjured part of the body; by measurement and last by auscultatory percussion, which yields a clear note in the unbroken bone and no note in the broken one, we should arrive at a correct diagnosis. There still remains the Roentgen ray as an aid to diagnosis, which is only of great benefit in a positive finding as a negative finding, may be due to the position of the fragments. Of course it will not often happen that a negative finding will be met when the cardinal symptoms of a fracture are present. If it does happen a shadow in the opposite diameter of the part will usually show the fracture plainly.

In all ordinary cases the x-ray should not be used to confirm the diagnosis so much as to confirm the accuracy of reduction of the displaced fragments. But in injuries of the metatarsals; in fractures of the scapula; in some shoulder and hip joint injuries; in crushing injuries of the hand and wrist; in fractures of the pelvis and in some

injuries to the ankle and tarsus, a skiagram is necessary for a correct diagnosis. Sometimes we are sure of the fracture in these parts but often the extent of the injury is not appreciated until we have our x-ray plate.

I have spoken of the x-ray plate in the singular, but in many cases it takes two plates in order to arrive at any satisfactory conclusion either as to the extent of the injury or as to our success in reducing the fracture.

I quote one author as to the routine use of the x-rays. He says, "Much nonsense has been written about the necessity of a skiagraph as a preliminary to the treatment of any fracture—"of criminal neglect" in failing so to use it. This is sheerest nonsense, and I wish to be clear in disclaiming it. Very commonly its use is necessary and it is often impracticable."

In many cases the pain and nervousness of the patient is so great that it is necessary to administer an anesthetic before any examination of the part can be made. In these cases it is well to prepare our retentive appliances before giving the anesthetic and then when we have made our examination proceed to reduce the fragments and apply our retentive appliances while the patient is still anesthetized.

Before discussing the treatment of fractures let us consider the prognosis. I believe that in many cases the dissatisfaction following the treatment of a fracture is due to the too favorable prognosis given at the time of injury, and this is frequently due to the tender heartedness of the physician. He is sorry for the patient who is nervous and excited as a result of injury and he promises too much and when litigation results he has need to be sorry for himself. Some times I have felt that a too favorable prognosis is the result of a fear on the part of the physician that he will lose the case to some competitor if he is too guarded.

However that may be, it is necessary in justice to one's self that great caution should be exercised for while it is true that most fractures will recover with little or no deformity, and a restoration to practically normal function, yet the reverse is so often true that very careful thought should be given to the formulation of a prognosis.

There is an added advantage in a guarded prognosis, it, if taken in good part by the patient, renders him more tractable and easily managed during a sometimes prolonged convalescence. If on the other hand the prognosis renders him dissatisfied, consultation can be had and the correctness of the diagnosis, prognosis, and treatment verified.

I wish to say at this time that I believe another physician should whenever practicable, see all cases of fracture, at least all the more serious ones. This seems so obvious that I only mention it.

While I do not believe that as many damage suits, in proportion to the whole number of fractures, follow the treatment of compound fractures as follow simple fractures, still the danger of infection, and following infection, non-union, necrosis, and prolonged suppuration render the necessity for careful prognosis in this class of fractures imperative.

Treatment. That every fracture requires individual treatment is axiomatic and ought not require emphasis; but when we see the formidable array of splints that are offered for the treatment of this class of injuries, each one guaranteed to suit all fractures of that extremity, it seems that some emphasis ought to be placed on the fact that each fracture is different in some degree from every other fracture and requires individual study and careful thought to determine what methods and appliances are best suited to obtain the best result in that particular case.

It is well to remember that nobody's splint or appliance is suitable in all cases and the physician who has the best results in the treatment of fractures is he who uses the simplest appliance; that, combined with mechanical skill and dexterity, with painstaking care in the details of treatment, will maintain the fragments in as near their normal relations as is possible until union shall have been effected.

What is the object of the treatment of fractures? Restoration of normal function. How shall we accomplish this? First, a correct diagnosis. Second, a proper return of the fragments to their normal relations. Third, maintainance in this position while repair is being made.

The first, we have discussed, the second, the reduction of the fracture should in all but the slightest of injuries be done under an anesthetic. When anesthetized the muscles relax and the parts are more easily restored to their normal relations, the patient is unconscious of the manipulations, proper extension can be made and the necessary manipulations to secure apposition are made with ease and freedom from the annoyance attending work on a conscious, resisting victim.

The third requirement, maintainance of the fragments in apposition is really the test of a physician's skill and resourcefulness in handling this class of injuries. There is the constant pull of the muscles which tends to shorten the limb and to cause overlapping in the long bones; there is the necessity for moving the patient which especially in leg fractures may cause disarrangement of the fragments. There is always the possibility of loss of alignment, there is the danger from a too loose or too tight dressing, and many other things too numerous to mention, always staring the physician in the face.

The physician who treats fractures most successfully is the phy-

sician who is always on the alert, he will see his patient frequently, he will make a careful comparison with the uninjured part at every call, he will take no chances on an apparent difference in the corresponding parts, but will when such does appear proceed at once to assure himself that it is only due to swelling and not to displacement. He will remember that the limb will atrophy from disuse and that long continued fixation of a joint in an adult is harmful, and that the tighter the constriction about that joint the more harm will result. He will not fail to remove his dressings frequently, especially after the first two weeks, to give the affected part massage and to manipulate the joints immobilized especially the first joint below the injury, and he will be careful in doing this to not displace the fragments. He will remember the time necessary for union to be completed which is from four to six weeks in the clavicle, to eight or nine weeks in the thigh and he will remember that in very few cases will there be any union before seven to ten days.

He will in all cases, except perhaps the fingers and toes, have a skiagraph taken, at about the end of the first week, if it is practicable.

The x-ray at this time will show whether there is apposition of the fragments and if apposition is not good the deficiency may be corrected.

If unable to correct the deformity or if when corrected there is marked tendency to recur some sort of operative fixation will be indicated.

The discussion of the open treatment of fractures would take us too long a time, so I will only say that where ever possible I believe the open treatment should be avoided.

The experience of the surgeon will make some difference; a physician with large operative experience who has taken pains to develop his bone technic may with great success, operate on fractures, in which a physician with less experience and less perfect technic will have an infected wound with all its unpleasant consequences. I believe it is admitted, generally, that the test of a surgeon's perfection in asepsis is his ability to do bone surgery without infection.

As to the use of the various materials to retain the fragments in apposition, I believe that no one thing is best. In some cases all that is necessary is to suture the periosteum with chromic catgut; about joints, suture of fascia and ligaments may be added to this. Other types of fracture may require an encircling suture of chromic cat-gut or of phosphor-bronze wire.

In some cases we may succeed by driving a nail through the parts and in some it will be necessary to resort to the use of a Lane's plate.

If the fracture be compound there is already the possibility that we have an infected wound and, except in cases where a very sharp

fragment has just punctured the skin, where we **may** be justified in disinfecting the skin wound without enlarging it, if we watch it carefully afterwards, we should within the first twelve hours, if possible, open up the wound, trim off with scissors all useless torn tissue and, after thorough cleaning, carefully disinfect the wound, tincture of iodine being the best chemical disinfectant. After the disinfection is complete such measures should be used to hold the parts in apposition as each individual case requires.

I see no great objection to the use of a Lane's plate in these cases, if it seems indicated even though it be necessary to remove it subsequently because, the fragments will have been held in apposition long enough for some union to have occurred and the danger of shortening or angular deformity will be materially lessened.

In conclusion let me recommend the use of the x-ray where ever possible to confirm the reduction of the fracture, even if previously used as an aid to diagnosis; more frequent consultation, in fact in all, but the most trivial fractures; more careful prognosis; that fractures should more generally be treated by the surgeon, my belief being that the general practitioner would gain as much by the reference of these cases as he now gains by referring his abdominal surgery, and last, if these some-what wandering and fragmentary suggestions be followed, there will be much more time and attention given to this class of injuries, and a fee commensurate with the skill required and the risk assumed should be collected.

SOME THOUGHTS UPON THE TREATMENT OF PUERPERAL INFECTIONS*

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I can expect to say little of anything upon a subject that has of recent years been given so much attention as the treatment of puerperal infection. But its importance is so great that I am led to its choice as the topic of my paper on this occasion.

Although the treatment of this condition has been under consideration for centuries yet it is one of the most difficult and most critical problems with which the practitioner has to deal. You will say prophylaxis is the treatment; to this we must assent. What shall be included in this? Shall we use the antepartum douche? Generally speaking, no. In some special cases, yes.

In some cases of specific infection the antepartum douche is demanded. And in cases where there is discharge from pus collections from various origins.

In my judgment the hands of the physician is the source of the greatest danger in the majority of cases. If we bear in mind that

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puerperal infection is little different from infection in the abdominal cavity in abdominal section, then let us consider the wearing of sterile rubber gloves in prophylaxis of puerperal infection the same as the abdominal surgeon wears gloves in the prevention of surgical infection; and let us not neglect to first thoroughly disinfect our hands as though we were compelled to do an abdominal section barehanded.

As another point in this connection I suggest that we make it the invariable rule of clipping off the vulvar hair in every case. This for two reasons. 1. It removes one great source of infection during labor, 2, the odor of adhering particles of blood clot undergoing decomposition is avoided as is also the danger of their proximity to the genital atrium.

After delivery shall we use the post partum douche? What is Nature's plan of protection? The vaginal secretions normally are protective. The liquor amnii has a tendency to wash away any noxious material which the vaginal secretions have not handled. So the intermittent passage of this fluid keeps up a more or less constant irrigation of the vaginal tract. Then again, the expulsion of the child is another means of carrying outward foreign material. The placenta following is an additional measure and last and most important is the closing up of the uterine sinuses at the placental site by the uterus contracting, thus shutting the doors to infection which may have accidentally gained access to the uterine cavity. These barriers in conjunction with the increased metabolism of the organism make up a great portion of Nature's armamentarium. In the face of these facts let us carefully consider before we use the post partum douche.

Notwithstanding all your precautions only too often, to your utmost surprise, you find your patient, in three or four days, bearing every evidence of having a septic condition. Now what shall be done? This depends upon the location and nature of the infection. If there is temperature, disturbed pulse rate and general malaise with abnormal lochia, with or without malodor, and upon examination a patulous os is found and no evidence of extension of the infection beyond the uterine cavity, then I do not hesitate to explore the uterus. When possible, fully anesthetize the patient. The hand is passed into the vagina with fingers into the uterus. The finger is passed carefully in all directions over the uterine wall and every particle of pulpy material found is broken up, the nail being used when necessary to separate tightly adherent placental tissue. In this palpation one can feel the trabeculae and the intervening depressions at the uterine site. In these depressions we will frequently discover the offending material in the form of blood clots or placental remains. In this condition I formerly used the curette with very unsatisfactory results. Now, I seldom resort to its use for I believe in the greater number of cases it is absolutely unnecessary

and the enemy of Nature's process of protection. To make sure of removing all the offending material with the curette it is necessary to go carefully over the entire placental site whereas the debris in most instances is localized. Besides, the traumatism created by the instrument opens up fresh atria to absorption of septic material. Having loosened up all foreign substance from the placental site I gently flush the uterine cavity with a warm formalin solution, (1 drachm 40 per cent formalin solution to 2 quarts sterile water) and where I can see the patient frequently this is all the treatment used; in the meantime she is closely observed.

In cases that cannot be so seen I have used the alcohol treatment with satisfaction in the cases of localized difficulty as in the case here quoted.

Mrs. W. H., physician's wife, had a normal delivery May 22, 1909, except hemorrhage was excessive after third stage. May 25th patient had symptoms of infection. An unsuccessful attempt was made to entirely free the uterus of debris which the doctor claimed he felt present. The symptoms continued to grow worse day after day until I saw the patient on the 28th at 11:00 A. M. Patient was pale and features pinched, temperature 103°, pulse 120 and thready, some pain and tenderness over the hypogastric area. Considerable tympanitis was present. Patient etherized and carefully prepared for vaginal examination as she was very tender and nervous. The lochia was scanty and no odor was detected. The os was patulous, uterus freely movable. The hand was passed into the vagina and the finger in the uterus carefully palpated the placental site. Beyond some detritus nothing except a piece of placental tissue the size of a marble was discovered attached at the left border of the placental site. This was easily separated and broken up. The formalin douche was gently used washing away considerable debris. A sterile five yard 2-inch gauze bandage was now stitched to the end of a sterile soft rubber tube. The tube was passed to the fundus of the uterus, the end protruding three inches beyond the vulva. The gauze was gently packed around the tube just tightly enough to hold the latter in place. The os was not packed but merely the single ply of the bandage passing into the vagina. The nurse was directed to pour into the tube, every half hour, one drachm of 60 percent alcohol. This to be kept up for twenty-four hours. If at the end of this time the symptoms abated the alcohol was to be used every two hours for the next twenty-four hours, then gradually decrease providing the patient was doing well. The vulvar pads were to be changed when soiled, otherwise, the dressings were to be left undisturbed. The bowels had been freely moved by calomel and salines. In addition brandy and strychnia in moderate doses and nucleins advised. Tepid baths were to be given when temperature rose to 102.5°.

Result— May 28,—Treatment began. Temperature 103.° Pulse 120
May 29, Temperature 101.2° Pulse 100

May 30th, Temperature 99.5° Pulse 88

May 31st, Temperature 98.5° Pulse 68

The patient weak but otherwise everything seemed very satisfactory and dressing and tube were removed. Patient went on to complete recovery. This case is a representative one of sapremia.

Going into the uterus with the finger removes the doubt as to the location of the infection. If after the complete removal of the uterine contents the patient gets progressively worse we may safely conclude that the infection has passed beyond the uterine cavity. Very rarely then will it be necessary to use the curette in these cases of postpartum infections. This applies also to the cases of infected uterus after abortion but does not apply, however, to abortion with retained non-infected placenta which should be removed carefully by the sharp curette.

If the case is one in which the infective process has passed beyond the uterine cavity with a septicemia we are brought to face a far different problem and one in which there is a diversity of opinion regarding its management. These cases, as you know, present various pathological lesions: as, abscess of uterine wall, adnexa, septico-thrombo-phlebitis, septic emboli in distant organs and pyemia and peritonitis with pelvic exudates. In these cases I look upon the uterus as res sacra and leave it strictly alone even though there may be debris left in the uterus. I hesitate to interfere for almost invariably the patient gets worse upon such interference. We have now to depend upon general measures with or without surgical intervention. There is danger of doing too much. Ofttimes they do better by giving general stimulative and supportive treatment and leave them absolutely alone locally and not be influenced to do things upon the solicitation of friends of the patient, making up your mind what is in the interest of the patient and act accordingly. Where there is involvement of the various pelvic structures, a waiting policy is generally the best one to pursue.

If there is peritonitis or evidence of pelvic suppuration going on, the Fowler position for three or four days is worthy of trial, also Murphy's drop method of normal saline per rectum is used, meanwhile, the stomach is kept absolutely empty and do not allow the patient's friends to bias your judgment by working upon your sympathy to allow just a little of this or that by mouth as absolute rest to the stomach and intestines is demanded in this particular class of cases. Sustain the patient by nutrient enemas every four or five hours. The bowels are encouraged to act daily by small saline enema. Medication is best given hypodermically or per rectum as required.

Surgical intervention in such cases has its advocates. Among those methods proposed are early hysterectomy, vaginal incision and packing the cul-de-sac of Douglas with iodoform gauze, various operations upon thrombosed veins, abdominal incision, etc. These

various operative measures, while in some few selected cases may have some virtue, have high mortality generally speaking, and to have our hopes rewarded by success an almost absolute diagnosis must first be made which in the majority of these cases is most difficult if not impossible at an early period. At a much later time, however, when local processes become circumscribed, then and then only, can operative treatment be attempted with promise of success. If the patient survives to this time and the septic symptoms continue an abdominal incision would then be justified and any pus collection evacuated and drained safely, as after a period of three or four weeks the pus would likely be sterile and so little danger of further spread. In order then to expect success in operative interference the indication must be clear and the promiscuous opening into infected regions is hazardous and offers little, if anything, better than the expectant plan of treatment.

In addition to the supportive measures mentioned, nucleins, vaccines and serums are in the initiatory stage. Of these the vaccines seem to have given very definite results.

The ravages of this dreaded disease have, in the past, been terrible and very little of positive value has been added to its treatment and anything science brings to light in the vanquishing of this mortal enemy—sepsis—will be hailed by mankind with gladness.

In order to better impress the foregoing facts upon our minds I have appended three cases as illustrations.

Case I. During the autumn of 1898 I was called to deliver the placenta six hours after birth of the child of Mrs. A., who was the mother of several children. For a number of years she had had chronic diarrhea. I found her lying in a pool of fecal matter which had been discharged before the child was born. Every care was taken to carefully cleanse and disinfect the patient, when I expressed the placenta without difficulty. Not to my surprise, however, promptly on the third day the patient presented every evidence of infection. Temperature rose to 103° , pulse 110, with considerable pelvic pain and tympanitis. General measures were adopted. In twenty-four hours the whole condition was aggravated. According to the teaching of that time I considered it as a classical case for curettage and intra-uterine douche. This was resorted to. A sharp curette was freely used followed by mild bi-chloride douche and the uterine cavity packed with iodoform gauze. In less than one hour the patient had a violent chill and the temperature went to 106° and pulse 140. This temperature declined in a few hours to 104° . The following day, patient's temperature went to 106.5° . In spite of cold bathing and general treatment the patient's condition became progressively worse and she died the sixth day from the beginning of the first rise of temperature. This was undoubtedly a case of true septicemia.

Case II. Mrs. M., age 24, Bohemian. Patient was delivered during the night with retention of the placenta. In the absence of a physician the women sympathizers and curiosity seekers took turns in trying to deliver the placenta. All their attempts were unsuccessful and I was called the next day. After every care at disinfection was exercised I failed to express the offender and found it necessary to manually deliver it under strict antiseptic precautions. I followed up the cord to the placenta and found it firmly attached, so much so that I had difficulty in inserting my finger tips between the uterine wall and the placenta. The patient did very well until the fifth day when she developed abdominal and pelvic tenderness with chilly sensations followed by a somewhat intermittent type of moderate temperature. Remembering the malicious interference of the friends and feeling sure I had removed the entire placenta, and still having a vivid recollection of the case of the previous year, I decided not to curette but wait. During the following three days the patient got progressively worse. In the meantime a hard mass developed under the right vaginal wall. A consultation was advised and obtained. The consultant urged curettment followed by intrauterine bi-chloride douche. Being a very successful practitioner of large experience I consented and he did the work. At the same time the general treatment was closely adhered to and the mass referred to was left unmolested. After three days the symptoms abated and in two weeks the patient seemed to be slowly convalescing with no temperature and fair pulse. Upon request of the family I ceased to attend the patient. In one week from the date of my last visit another physician was called but the patient died three weeks later. The family reported that the Doctor was intending to amputate the woman's leg, so we may conclude that this case was one of thrombo-phlebitis.

Case III. This case was not mine but I take the liberty of referring to it as a representative of its class.

Mrs. B. very ill for five days from retained placenta after abortion. She suffered from excessive loss of blood; temperature 105° ; pulse rapid and of poor quality; general condition grave. Patient was curetted vigorously and thoroughly with the sharp curette and uterus packed with iodoform gauze. There was no abatement of symptoms and in three days she succumbed to the infection.

In the light of our present understanding of these forms of infection, be it after abortion or full term, in my judgment, in all these cases cited the patient would have had better chances had the curette never been used and in the latter case the use of the finger would have had a decided advantage over the curette.



Discussion.

The President: (Dr. D. W. Smouse): The paper of Dr. Field is before you for discussion—an interesting subject. Dr. Ruth, will you open the discussion upon this paper?

Dr. C. E. Ruth: I would prefer some one else to do it. I am practically out of the obstetrical business. However, I certainly have had entertainment along this line. I was very glad indeed to hear the stand that the doctor took in this paper on the preventive side, which far out-weighs every other consideration. I was pleased to hear him emphasize the necessity for the most thorough preparation of the hands. The clipping of the hair, I noted with interest, but I did feel as though I would like it awfully well if every doctor could shave the vulva of every patient as a preliminary step in really getting them clean. I feel that the infections, while they have been produced by the doctor examining with unclean hands, they may be produced, as intimated in the doctor's paper, by the gloved hand passing through a mass of hair over the vulva that is never really in a surgically clean state. Enough of that, however.

The douche I have been afraid of for a long, long time, as ordinarily used. I have not permitted the use of a douche in 25 years that I did not superintend myself in cases of this class, unless I had a very capable nurse, and she with sufficient intelligence to see that the patient was not only clean but that the labia were separated before any nozzle was carried into the interior of the vagina. The fact is that the upper part of the vagina is usually in a pretty good condition if we give it a chance to be.

In regard to the two conditions that we meet, sapremia and septicemia, I have seen cases with a putrid placenta go for six weeks, losing blood every day, having a little fever, and make good recoveries, simply because the putrefactive germs did not gain any considerable entrance into the circulation, and would not if free drainage was provided. I do not believe they would have had any fever at all if free drainage had been provided.

But in the other class of cases, I used to think I was skillful with a curette. I was as foolish as Henrotin who said that a man who perforated a uterus in doing a curettement was a criminal; and the next time he did a curettement he perforated the uterus. I have done it. And why? Simply because in some of these cases of septicemia the uterus is so soft you can put your finger right through it. I tell you, gentlemen, I am mighty afraid of a sharp curette, and cautious in the use of a dull one in those cases. I grant you in these cases there will be pockets of pus sometimes you will open up from the inside, but the curette in cases of pure septicemia is dangerous indeed.

The doctor has indicated that, in the spread of the infection, in the opening up of lymph spaces for the absorption of the septic material, the violent chill that occurred and the rapid demise that has been noted by those with any considerable experience following these cases is due to removal of Nature's protective exudate.

I was particularly pleased with what the doctor said with reference to the use of the gauze and drainage tube. I could not exactly understand his idea with reference to the virtues of the alcohol. When I have used alcohol in the interior of the uterus in such cases I have usually wanted to have considerable iodine in it, and I applied it pretty freely. When I wipe out or empty a uterus, I have in the last 15 years, simply gone in there with an iodine swab as soon as the hemorrhage was at all stayed, and I mopped the whole surface thoroughly, and did not neglect the arrangements for drainage.

The President: Dr. Sloan, you have had a lot of experience in obstetrical work.

Dr. M. G. Sloan: When I began practicing medicine the bug had not been discovered. We didn't know anything about bugs, and puerperal fever was very, very common. I am inclined to think, without having any definite figures that at least one woman out of five in the ordinary practice of medicine had some form of child-bed fever, as it was called. It was a serious thing. Nobody knew why it came. The best doctors that we had would simply come in and take off their gloves, if they had a pair on, sometimes not any gloves, been driving a horse, and make an examination by anointing the finger with some lard in an old saucer, anything accessible that was greasy, and we could not understand why these women got sick, but they did. That's all right, you young men may smile at

that, but the best of us were just as ignorant as the worst of us. We didn't any of us know anything about it. Oliver Wendell Holmes had suggested some ideas that were in line with what we know now, but he was away ahead of his time. So that there is a wonderful improvement from that day to this.

As Dr. Field has so well said, prophylaxis is the important thing about this. The older I get the less I really know about the treatment of these cases. That is, I am not really so sure as I used to be that I know the best thing to do. Prophylaxis is the great thing.

I want to call attention to one thing that the doctor did not mention, and that to me is extremely important, and that is, like all other good things, you can overdo the emphasizing of the causation of puerperal fever by the doctor's carelessness. I happen to have had some unfortunate experiences along this line, and I absolutely know of one case where I feel as innocent of blame as any of you that never saw the patient, that I was charged with the crime of producing puerperal fever. Our president happens to know something about this case that I have in mind. A smear taken from the cervix showed a nice lot of gonococci and nothing else, an absolutely pure culture of gonococcus. I did not really feel that I was to blame for introducing that, and I don't think I was. So that you can overdo the idea of laying the blame on the doctor. Sometimes the doctor is absolutely innocent. The patient is poisoned in some other way, and we ought to bear that in mind.

The President: Further discussion? This is an interesting subject.

Dr. Bierring: I suggest you call on Dr. Vest.

The President: Dr. Vest is called for.

Dr. W. E. Vest: Mr. President and Gentlemen: I think every man here that has been in the practice as long as the most of us can recall just such cases as Dr. Field has described tonight. I think if Dr. Sloan will read Will Carleton's poem on "The Country Doctor" he can get a great deal of consolation. He concludes something like this—He says, "There is not anything so convenient, or so nice, nor so pleasant, as to have the poor country doctor to lay the death of the baby on." I think he will get some consolation in that. I think that is humanity throughout.

But, gentlemen, I believe that this is one of the saddest things we have to compete with, is simply a serious case of infection following labor. The surroundings and everything make it that. And I believe that until the time comes when every case of labor is handled as a case of surgery, and just as strictly as an abdominal section is made, we will have just this same condition. I think two things should be emphasized in preventing it. One is closing up every tear that extends beyond the mucosa. I think that is one of the greatest means we have. And the greatest evil I think is too frequent examinations made of the patient before and during delivery. I think every case that can be diagnosed by external manipulation and examination made by that, and the vagina not touched, is safer than any case that is examined during the labor or after, and that at no time should the vagina be touched after delivery except in the greatest emergency. Those are the practices I have put in force, and those are the true secrets of a successful determination of the case.

Dr. Ruth: You mean you close all lacerations of the cervix?

Dr. Vest: Yes, Dr. Ruth, that is my practice, bringing the cervix down and closing that up at the same time. I close that with a silk worm gut and then be in no hurry whatever in removing it—if I don't remove it for three or four weeks. I have left it that long with absolutely a perfect result. I think every tear, both of the mucosa and the cervix, should be closed at the time of delivery.

Dr. Ruth: Do you have any trouble with those cases of women infecting themselves by their own digital examinations?

Dr. Vest: Doctor, I don't know as to that. I have never had.

Dr. Ruth: Haven't you had them coming to your office many times and telling you how the uterus feels.

Dr. Vest: They might have told me that before delivery.

Dr. Ruth: I mean after they have examined themselves.

Dr. Vest: No, I have not seen anything of that kind.

Dr. C. B. Spates: I have a case that might be well if I would confess up a little on, that might give light on this subject. I remember there were domestic difficulties that rather precipitated a case brought to my house, and the baby was not very far distant. My wife having been in the habit of going with me, and having been for a long while, I thought I

would let her deliver it. So she did, and got along very nicely, and did well. I had not washed up my hands or done anything with it at all, but after a while I examined the woman and found that she was bleeding quite considerably. I took off my coat immediately, without washing my hands, and found an hour-glass contraction with retained placenta. So I immediately went after it, without washing my hands. Now that brings up just one thing, and that is that while she had lost some blood I didn't want her to lose any more blood, but wanted to conserve as much as possible the blood that she still had. And I think it is true with a case of obstetrics that has lost a considerable amount of blood, that the septic condition is in bad condition certainly, but if you have a puerperal condition there with the blood supply still conserved, you have a much better chance. This patient developed fever, tympanites, etc., on the third day very decidedly. I did not feel alarmed about it very much, because as I say I had conserved a great deal of the blood supply and did not feel at all afraid of it, and I knew that I had removed all the placenta, absolutely knew that, and so after douching her with a permagnate solution, etc., and some internal medicines, she made a good recovery. And I assure you that I had no doubt about that case of recovery. I knew that it was probably going to come, but I had the material there to fight it with, and that was the good blood supply that was left.

The President: Any further discussion of this paper?

Dr. Bierring: Dr. Conkling.

The President: Dr. Conkling is called for. The east side has lots of children.

Dr. Wilber S. Conkling: This is a very interesting paper. Some of the gentlemen have spoken—one is Dr. Vest—about tears. I don't think the average tear to a cervix amounts to that. (Snapping fingers.) I think it is not the proper treatment to repair the average tear of the cervix after labor. Very few women are delivered but who do have a slight tear of the cervix. The majority of them heal without causing any trouble until some doctor or surgeon tells them that they have got a lacerated cervix, and they immediately develop headache, backache, etc.

A severe tear requiring repair to the cervix I surely would not suture with silk worm gut but would use 20-day or 10-day chromic, or some other form of slow absorbing catgut. I believe there is more danger in bringing down your cervix immediately after delivery and repairing it than the benefit you get from it.

In regard to the prophylactic treatment of puerperal fever, I do not think that any doctor is justified in caring for a case of obstetrics without sterilized gloves. I think it is just as important to wear gloves in obstetrical work as it is to wear gloves in your abdominal operations.

And as to curettement, I can wholly agree with Dr. Field and go him a little bit further. I do not believe a curette is often necessary at all, and never a sharp curette in a puerperal case. I have never seen a case yet where I felt a man was justified in using a sharp curette. I think to remove the placenta with a pair of placental forceps and wipe out with gauze is practically all that is necessary, and above all things never a sharp curette.

In regard to Dr. Spates' going in with an unwashed hand, I believe I would as soon risk a little post partum hemorrhage as I would giving her infection. I believe manual control of the hemorrhage until the hand could have been sterilized would have been safer than going in with a soiled hand.

As to the general treatment, I don't know whether any of the vaccines do any good or not. I have used them some. Some get well with it, and some get well without it. I believe, if it is the character of the infection which you are dealing with, as to whether your patient recovers or not is not so much the line of treatment employed, provided there is not any treatment that interferes with nature's efforts. I thank you.

Dr. O. W. Lowery: Mr. Chairman, I have practiced medicine some 43 years, and I practiced medicine a good many years before I ever saw a glove or knew anything about them. I was not in a hospital but in the country, where perhaps you would have to squeeze in by the side of the bed to get where the woman was. I had none of the advantages that you speak of here tonight, and what did I do? I went in there and rolled up my sleeves above my elbows, and then I thoroughly scrubbed my hands, and then nearly always I cleansed that woman with soap and water, and in that condition I attended her and delivered her, and then I delivered

the afterbirth as soon as possible afterwards. And when I had that completed I would know that that uterus was thoroughly contracted and that everything was out of the vagina. Then I would take that placenta and I would take it in my hands and I would examine it until I would know absolutely that there was nothing in that uterus. Then I would cleanse that woman. I would not allow some old woman to do it that was filthy and dirty. There is where you get your infection. I would cleanse that woman myself, put on my bandage, put on my support, and when I would leave there I would say, "Here, if this woman has a chill send me word." And in that way if I had any trouble, if I had occasion to return, I did not go in there with a curette. I never have gone in with a curette unless I knew there was some of the placenta there. But I did have my douche, my return douche, and I passed that douche into the uterus, and I irrigated that thoroughly with salty water, a normal saline solution. I used no permagnate. I used no bichlorid. I used sterilized water until I knew that was thoroughly clean, and in that way I have had but little to contend with in puerperal fever. The most that I have had has been those that produced abortion where I had to go in and clean out the work that they had done, or somebody else.

The President: Any further discussion.

Dr. Dubigg: Dr. Smouse.

Dr. D. W. Smouse: Gentlemen, I don't know that you would care to hear much of ancient history. I should have to apologize perhaps to many of you for speaking on a question of this kind. As you perhaps all know I am not in that line of work and have not been actively engaged in it for a good many years, but I am seeing a good many of these cases in consultation and try to keep myself fairly posted. But I must say to you that I get more ideas from the younger men who are doing the large amount of work and are keeping up rapidly with this class. It almost makes me shudder when I think back to the time when we had this large number of puerperal cases, and such fearful infections as they used to have that were followed by death and were traced to the doctor's fingers. I do not believe that any city—certainly none that I have any knowledge of—in the United States has any more fearful history than this one when it is looked up. I shall not say anything further in regard to that because it is so far back that it was before the time of bacteria, but many of the germs were undoubtedly carried by the fingers of the doctors.

I would like to hear what the sentiment of the Society is here in regard to passing a resolution that it is the sense of this Society that every physician a member of this Society attending a case of obstetrics should wear rubber gloves. I think we could not do a better service to the community than to have that understood generally and to have it carried out thoroughly. I know of nothing that would probably do more good in every and all cases, if that was rigidly adhered to. I know a good many physicians who are careful and thorough and conscientious and competent, and yet have every confidence in the use of the rubber gloves, and they are not always sterile. They don't take time to make them sterile, and they are finding themselves with a large percentage of cases, attending them without sterile gloves, although they may be packed in their satchel in an unwashed condition. That is carelessness. I have seen, as you must know, many cases of hemorrhage, and severe hemorrhage, and yet I do not remember to have seen a case that was severe that I do not think time could have been taken to have sterilized a glove or a hand before it was introduced into the vagina or into the uterus.

There are some things in regard to tears, about lacerations, but it would take considerable time. I must say, however, that my theory differs somewhat from the sentiment expressed in regard to lacerations. It has been my experience that there is more infection following the sewing up of tears than when the tear is left open. Now that can be figured out in two or three different ways. In the first place, the case where there is a laceration has been a severe one, naturally you are more likely to get infection in a severe case than you would in a mild one. But I am as positively confident as I am standing here that I have seen cases where infection followed more quickly where the deep lacerations were sewed up. I saw one of the most competent physicians I have ever known of on the third day tear open all his stitches and open up the wound in order to get a perfectly free drainage, where he had sewed up and closed up everything completely. And he did a beautiful job, because I saw him do it at the time. I met him in consultation once afterwards where apparently the

close suturing had been responsible for preventing drainage. After all, these cases, nine out of ten of them, take care of themselves if the drainage is perfectly free. If you do anything to prevent free drainage, then you are endangering your case if there is infection there. Free drainage and a proper drainage of these cases, and the draining of them very early, is the most important thing. If there is one thing I know of that has aided and assisted me, and that I feel safe in, it is the introduction of a drain tube into the uterus, and the introduction of some antiseptic through that tube freely and frequently. I think alcohol is a very good thing. I never have used that, but it appeals to me as being a good thing. I have also used a mild solution of creolin, or extremely mild solution of bichlorid. I don't think anything has ever given me better results than tincture of iodine. I got my idea first from the Illinois man, who wrote a paper on that I think about 25 years ago. It was introduced then and thought it was a great invention. Hunt, of Dixon, Ill. Probably some of you have seen his paper. You have heard of him, doctor. He obtained considerable notoriety over the use of iodine in puerperal cases, during puerperal infection. That was advertised very largely over the whole country at that time, and it was thought to be one of the greatest improvements along that line. I don't think it has been followed up very much.

In regard to the use of serum I can say that eight or ten years ago when they first came out I had considerable experience with them, seeing them used in a large number of cases. I saw the most brilliant results in one case. The woman had a temperature of 106 1-2, and after the use of serums the temperature dropped down very nearly to normal and continued so. That happens frequently. I have seen a great many cases where serum was used in enormous amounts without any benefit. I think, if I judge correctly, the serums are being largely discarded in those cases. Of course they have not proven themselves to be as valuable as they were first thought to be.

I should like to hear what the society has to say in regard to passing some resolution as to the use of rubber gloves. If there is no further discussion, I will call on Dr. Field to close the discussion.

Dr. G. A. Field: I am very grateful that the subject I chose tonight has participated such a free discussion. In choosing the subject I learned that the subject had not been brought before the Society for some time at least, and the preponderance of the papers had been of a surgical character, and it seemed to me to be a very opportune time to present such a subject, as vital as this should be to every practicing physician, because so many of us run into those things unavoidably, and we have to handle them whether or not we be responsible for the infection or not.

I was very much pleased on one point, and that was the discussion on lacerations. I have never been very clear in my own mind exactly what should be done with a lacerated cervix. It has been my custom always to close a lacerated colporrhæxis, or lacerations in the vaginal tract, but when it came down to cervical lacerations I was always in a little bit of doubt as to what really was the proper thing to do. One thing I always decided at least was the closing of the cervix if I was fully determined that that was the cause of the hemorrhage. Otherwise I let the cervix go for a later period, because my experience has been by the time we have delivered the child and the woman gets the placenta delivered she thinks she has had enough, and I always delay the rest for some future period. Usually the repair of a cervix generally means a fight on your hands at that time, and the doctor is about as ready to quit as the patient is. That has been my experience.

Another point that was brought up was the vaccines and the serums. I am glad that was touched upon. I touched upon it in the paper in the hope that somebody would give us some light upon that question. But it seems as yet there is nobody got nerve enough to come out and say vaccines are the proper treatment for puerperal infection. There has in the past been quite a good deal of experimentation done along the line of the vaccines and the serums following the cultural method, a culture taken from the cervix and vaginal tract, and it seemed a very peculiar thing some have had an experience where septic uterus cases have died, and those where they found serums present have got well. It seems to me that is a very mixed affair, and one upon which nobody can contend for any result, and nobody is justified in saying, as far as I can understand, that vaccine or serum has any very definite value after all.

Regarding the rubber glove proposition I am glad that that was taken

up so thoroughly. I don't think every practitioner even today uses sterile rubber gloves in the handling of septic cases. I am sure that it is high time that something was done whereby every man would be encouraged at least to do that very thing by carrying sterile rubber gloves so that he may be ready for these cases upon very short notice. Dr. Smouse suggested some resolution that should be adopted by the Society in regard to that matter. I have a resolution in my hand, and I would be very glad to make it a motion that we adopt such resolution, which reads:

"Resolved, that it is the sense of this Society that physicians should habitually protect their hands with rubber gloves when in attendance upon obstetrical cases."

I take very much pleasure in making that a motion, Mr. President, that we adopt such a resolution.

The President: Is there a second to the motion?

The motion was duly seconded by several members.

The President: You have heard the motion by Dr. Field which has been seconded. Any discussion?

Dr. C. E. Ruth: I fear simply putting the question in that way won't count for very much. Most men think a thing is done when they get a pair of rubber gloves on, and they will go pawing around over most any old thing when they get gloves on. If those gloves are thoroughly sterilized before they put them on, and then the patient ready to make the examination, (have somebody capable make the preparation of the patient for the examination,) then it will count for something. But the gloves should be boiled for twenty minutes and should be kept sterile so that they can be put on at a moment's notice. Clean the hands first if you have time, but the president is talking about a case in which you make a good preparation. But, Mr. President, I had one case, if you will permit the digression, a woman had been delivered about forty minutes, and I was ready to leave. I thought everything was all right. The placenta had been delivered and I examined it just as Dr. Lowery told us about. I made that a rule, and I supposed everybody did, to see that everything was out. I was putting on my hat and coat to leave the house, and I heard a peculiar sound, a sort of a swish, and the woman gave a sharp cry. I went to the bed. It seemed as though the blood was pouring out of that vagina the full size of my wrist. I simply slapped one hand on the abdomen and the other one into the vagina just as quickly as I could get it there, and inside of the uterus as well, and succeeded by bi-manual manipulation of the uterus in getting a contraction and stopping the hemorrhage. I would not have taken time at that time to have even put on a rubber glove. I thought the staying of the hemorrhage was the issue. I believe I have seen but the one case.

Dr. O. W. Lowery: I rise for information. If this resolution is passed—there are a great many suits brought against physicians—would that resolution not be a good thing in prosecuting a physician for the death of some woman, if he did not use the rubber gloves? That is a question I ask?

The President: Any further discussion? If there is no further discussion I will put the motion.

Dr. W. E. Sanders: There is one point which has been brought out in this discussion which I think is of infinitely more importance than the wearing of rubber gloves, and that is the danger of infection by repeated examinations: I believe that if this Society is to pass a resolution recommending that physicians attending obstetrical cases wear rubber gloves that it would be a good plan to also incorporate in that resolution that this Society likewise stands in opposition to the repeated vaginal examinations in the ordinary case of obstetrics, because such examinations are absolutely unnecessary in nine cases out of ten. A diagnosis of the physician can be made and most cases progress favorably without any examination at all. It is the cases which have the repeated examinations and the repeated manipulations, whether you have gloves on or whether you have not gloves on, that cause the infections. I believe to introduce a resolution and make rubber gloves the sine qua non of the practice of obstetrics would be entirely misleading.

Dr. G. N. Ryan: I am heartily in favor of what Dr. Sanders says. Some years ago I used rubber gloves all the time and was not as careful in manipulating with these gloves and in handling a case, etc., as I should have been, and I did have a little trouble with infection. I never had a case that gave me a great deal of trouble, but I corrected that by having a

pair of cotton flannel gloves or mittens made and those were sterilized in the sterilizer at the same time the gloves were, and all placed in a sterile towel for use in obstetrical work. Those are changed each time the grip is brought in. When the gloves are placed on, these cotton flannel mittens are also slipped on over them. At the time I want to make the delivery the mittens are slipped off and the examination made. I find that it has given entire relief from any signs of infection.

If I may digress a moment I will say, have a nurse prepare the case. We keep a nurse at the office and I have usually, if it is possible, had her prepare the case if the case is not ready. But it is always prepared, and if it is possible I have a bi-chlorid bath given from the hips down after a cleansing bath, if one has not been given.

In two cases, if I may be permitted to report, one being a puerperal convulsion and Caesarean section, there was absolutely no examination made until the sterile rubber glove was applied. One examination was made and found the os quite rigid, and then the Caesarean section was made and the abdomen completely closed after the examination, and now the child is a year old and the mother got along beautifully without any signs of infection. A case we had a very short time ago of placenta previa centralized. Two or three other physicians had seen the case and had diagnosed the case with digital examination from the history on account of repeated hemorrhages, but no examination was made. The first examination was made after the patient was in the hospital and prepared and the sterile glove was applied. It was a case of placenta previa centralized. A Caesarean section was made and the baby is now 15 days old and there has absolutely been no temperature at all. I only drop that as a hint.

I really believe that I will be against this motion simply because I think the wrong impression would be made. I believe that there is enough said in our literature today for every man to realize the importance of rubber gloves. I know they have all got asepsis in the brain, but all of them don't have it on the fingers. I believe it would leave the wrong impression to have this motion go through, and I would be rather in favor of tabling the motion for another meeting or so and look it over a little more carefully before we pass such a motion. I don't stand or pose as any more careful than other man here in the room at all, not at all. I only dropped that suggestion as a protection for the rubber gloves, and also to say that I do not favor the motion. I vote to table the motion.

Dr. Ryan's motion was seconded, and the motion to table being put by the president was carried, and the resolution offered by Dr. Field laid on the table.

BRAIN SYPHILIS*

E. R. POSNER, M. D., Des Moines.

In taking up this subject it shall be my object to cover not those lesions due to arterial disease or those cases of late, so-called parasymphilids, but only those due to gummatous formation in the brain.

They are of particular interest since they are diagnostically hard to differentiate from tumor formation of non-syphilitic origin, yet yield quite readily to institution of proper therapeutic measures.

The lesions are usually late in time, that is, are tertiary manifestations, but unfortunately do occur any time after initial infection. Generally, however, they appear in the third or fourth year, then any time as late as eighteen years after.

Pathology.—partake of the type of gumma elsewhere and are round cell infiltrations beginning as exudates about the smaller arteries. Follow the same evolution and after having attained full growth, show necrosis of its center, and heal by the formation of fibrous tissue. In size, they vary from that of a pea to an egg. In number, they appear singly or in groups of three to four. Regionally have a selective affinity for the base of the brain. They are uncommon in other brain regions. In location, they form usually in the pia—rarely the dura mater. The cortex of the brain is an unusual seat of origin—only secondarily is it involved.

Etiology. It is commonly assumed that inefficient and inadequate treatment of the early infection predisposes towards brain lesions later—still where sufficient mercury and arsenic have been given and treatment vigorously followed, these cerebral manifestations appear. As a matter of interest, the black and yellow races are not prone to such manifestations.

Alcoholism and excessive venery, those who worship at the shrine of Bacchus and Venus probably more than others, are determinants of such outbreaks.

Brain work, per se is not the only factor.

Symptoms. Headache characterized by being worse at night. It is intense, not usually sharp but dull persistent and bursting. In location it is frontal, occipital or at vertex.

Insomnia results from the headache. They are wakeful and get sleep as headache subsides.

Vomiting is not a feature as in other brain tumors.

Brain functions are profoundly disturbed, there is a loss of mental acuteness, concentration suffers, the emotional condition becomes changed; they are dull, listless and lose interest in life and things generally.

Sexual vigor suffers early. Partial or complete impotence is of-

*Read before the Polk County Medical Society, May 27, 1913.

ten a forerunner and again one of the first signs of improvement. The general health deteriorates; they lose weight and take on the appearance of being profoundly ill.

Vertigo seems to be quite frequent, an ill defined dizziness, usually without tendency to fall. The symptom is persistent and remains long after others clear.

As indices of what is going on in the cranial cavity certain signal symptoms are of value. These are symptoms due to pressure or involvement of cranial nerves.

The 3rd nerve, loss of function of nerve supply of levator palpebrae and evidenced by ptosis is probably one of the commonest seen.

The 6th nerve, paralysis, showing internal strabismus, diplopia, is not infrequent, occasionally the seventh nerve is involved giving rise to a rather incomplete facial paralysis.

Rarely the 8th nerve is in trouble and deafness results.

Diagnosis. Are easily confused with tumors of other origin. There is no guide aside from a carefully elicited history. In the absence of such history the therapeutic test is always available with the prevalence of syphilis nowadays its presence should never be forgotten. We can call to our aid the Wassermann reaction but one should not delay treatment awaiting reports, early and intense medication will result in much good.

Prognosis. These cases do not do well, they do not all get entirely well. The symptoms disappear and the condition apparently clears, but access of new lesions hangs as a constant menace to the individual. Permanent ptosis and persistence of vertigo, most troublesome sequelae remains as tokens of the attack.

Treatment. No condition in medicine is attended with quite so satisfactory results as that of brain gummata. Iodides and mercury are still the drugs of choice.

As to iodides, potassium iodide is one of the best preparation and is best administered in the form of its saturated solution in which each minim carries one grain of potassium iodide. The dose ranges from 10 to 100 or 150 grains, three times daily. Beginning at 10 to 20 grains and ascending one grain each day until symptoms begin to clear. Usually high dosage is not necessary.

Salvarsan alone has recently given good results in treatment of cerebral syphilis.

A rather odd case showing the vagaries of cerebral tertianism, is as follows:— male age 30. Infected in May 1911. I saw him first in December 1911 suffering from intense headaches, insomnia and a pitiable state of despondency which had troubled him for one month. He had been on thoro mercurial treatment, but continued to get worse; after watching him for a few days there suddenly appeared a complete left facial paralysis. Placed him immediately on potas-

sium iodide grains ten. His headache and insomnia disappeared as if by magic influence. Increased potassium iodide up to grains 21 tid. Within two weeks the facial paralysis cleared. All went well until one evening in March 1913 when he was seized suddenly with intense vertigo, several attacks of severe vomiting but without headache, simulating an attack of ptomain poisoning which I first thought it was. Next morning found him stone deaf in the right ear. He was placed immediately on grains 50 potassium iodide, with injections of bichlorid grains $\frac{1}{2}$ every other day for one week daily inunctions of one dram of mercurial ointment. The vertigo cleared within one week, but the deafness persists. The whole attack was obviously one of labyrinthine involvement.

Discussion.

The President: Gentlemen, you have heard the report of the case by Dr. Posner. It is open for discussion.

Dr. Walter L. Bierring: A man must be a good deal of a nihilist who does not see some virtue in the therapeutic use of potassium iodid. The question of its use in syphilis brings up the question to what extent the iodids and iodid of potassium have found a real place in syphilitic infection. I am sure we are all rather inclined to doubt its specific action in this disease. And if there is a place for the iodids in syphilis, it is in the tertiary stage when gummata are prevalent, or when fibrous tissue has replaced the gummata that result from syphilitic infection. Just in what manner the iodids act may not be very clearly demonstrable, but the iodids have always been eliminative and absorbing of fibrous tissue, and in that way perhaps tend to remove this product of the inflammation and bring about a good result. I am sure that all cases of visceral syphilis, and they are distinctly tertiary manifestations, respond much better to the iodids than they do either to mercury or salvarsan. So that the iodids have a distinct place in syphilis, whether they really have a specific action or not.

The President: Further discussion of this interesting case?

Dr. T. B. Throckmorton: I feel that Dr. Posner has brought before this Society a timely communication in the report of these cases of cerebral syphilis, but I also feel that the question as to the proper use of the iodids and mercury in regard to this class of cases has been and is yet a much mooted question. For instance, take the cases of paresis or tabes dorsalis which are considered to be parasymphilitic conditions occurring from five to thirty or more years after the initial leucic infection. These conditions are true pathological conditions involving the central nervous system, the one affecting chiefly the brain, the other the spinal cord. We have been told that these conditions are post-symphilitic toxemias. Here the tendency has been, I think, to use largely the iodids in the hope of eliminating possibly these post-symphilitic toxins or their products.

I believe if we agree with Noguchi and Moore in their recent work on the brains of paretics, that we may yet have to change our opinion, at least in some respects, as to these disease entities. These co-workers have recently shown in the examination of seventy brains of paretics that the spirochete pallidum was present in the cortex cerebri in twelve cases, that is, in practically one-sixth. These men further express themselves that with improvement in technic even a higher per cent than this will be obtained. Now if we are to accept these findings I cannot help but believe that we must look upon paresis, and possibly tabes, as being still indicative of active manifestations of syphilis rather than conditions due to a post-symphilitic toxemia, in other words considering them as tertiary phenomena, and in these cases it seems to me that not only should the iodids be freely used but that mercury in some form should be pushed to the limit.

The President: Any further discussion? I will call on Dr. Posner to close.

Dr. E. R. Posner: I agree with Dr. Throckmorton, Noguchi's work

is very good in observing the spirochete. But the damage has already been done. It is a distinctly permanent disease if your drugs do not clear it up. I imagine this case if I had not put him on the iodids would have had severe facial paralysis.

Answering Dr. Bierring's question, some one in New York two weeks ago reported a complete cure of cerebral gummata following six or seven injections of salvarsan. Potassium iodid does not always do it. It will cure syphilis quickly if used early. Another physician from the South reported a case treated with salvarsan. I have not anything to add, only I have seen a number of them in private work and a number of them in the clinic. Many of them showed a permanent vertigo, as usual disturbances with cerebral gummata. They do not all get completely well. I do not think Dr. Smouse would call them good insurance risks if they have any manifestations of cerebral syphilis, because they are always sure to have something else.

ACUTE OSTEOMYELITIS*

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In submitting this topic for your consideration and discussion, I shall only attempt to offer a brief report of a few cases from practice illustrating some of the varied phases this affection presents. In addition to this I do not attempt to offer anything particularly new or original but in my remarks will endeavor to submit a brief resumé of the modern and accepted views pertaining to this affection.

We, as general practitioners, I fear, too often entertain an erroneous mental picture of osteomyelitis. Rather than the vision of later sequela that comes to our minds on mention of the term, should be the clinical picture in these cases as they appear at the onset, and the later developments that occur as sequela, should appear to us as those factors constituting the price paid by the patient for their, and oftentimes, our neglect of the manifestations characterizing the original lesion.

Osteomyelitis is not a specific disease, but belongs to the group of septic infections, and is an acute inflammation of the bone and marrow due to pyogenic organisms; from wounds, as compound fractures, gun shot injuries and amputations; from the blood or lymphatic streams in the presence of a focus of suppuration in the skin, sub-cutaneous or deeper structures, such as the tonsils, respiratory organs, intestinal canal, genito-urinary organs, excoriations, bruises or small wounds in the skin, furuncle, chronic ulcers or exanthemata.

It was at one time held that osteomyelitis was caused by some one specific infecting organism, but this we now recognize is not true for the various cases may be caused by numerous pathogenic organisms as the staphylococcus, streptococcus, pneumococcus, tubercle bacilli, colon bacilli, and Eberth's or typhoid bacilli. These infectious agents must have means of entering the system and are then

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carried by the lymph or blood vessels as the conveying medium.

Mirowitch's studies and investigations show that the staphylococcus is never carried by the lymph as its virulence and life would be destroyed; the streptococcus, however, is carried by the lymphatics.

Courmont and Jaboulay's experiments tend to show that the staphylococcus attack bone tissues of the juxta-epiphysary regions producing necrosis, periostitis and slight or moderate suppuration with sometimes arthritis. Streptococcus attacks bone marrow in the juxta-epiphysary region leaving the bone tissues, periosteum and joints intact, and is more rapid in development.

Eberth's bacilli as a cause is rare in young children. When it occurs as the causative factor the osteomyelitis is less acute, more insidious, the febril reaction less, bone lesions and necrosis limited and more superficial.

To have osteomyelitis the presence in the bone of some micro-organisms is absolutely necessary, oftentimes aided by accessory causes preparing the soil for invasion such as trauma, certain acute diseases, scarlet fever, and measles all favor the development of micro-organisms; the general diseases as scrofula and syphilis, also aid by providing points of entrance as well as lowering the resistance.

Osteomyelitis is essentially a disease of childhood and early adolescence, or during the period of osseous activity. This is of importance histologically in the young for the epiphysis is made up largely of cartilage and few ossific centers while the diaphysis is a cylindrical bony tissue developed in periosteum and traversed by the medullary canal, and all sub-periosteal elements are more or less bathed in bone marrow, which, with the periosteum, is very vascular. The epiphysis and diaphysis in the young is separated by a cartilage of conjunction, and bulb which is very spongy and vascular. The blood comes here in large quantity and as the fine capillaries cover a large surface, many ending in cul-de-sacs and are more than double the calibre of their supplying vessels, thus favoring stasis. This peculiar vascularization favors local invasion of circulating microbes here in large numbers, constituting an area aptly named by Ollier, "The zone of election of pathological processes."

The investigations of Lanelongue show the lesions of osteomyelitis largely affect certain bones in certain extremities, namely, the upper humerus, lower radius, lower femur, and upper tibia, depending on the greater activity and vascularity of these parts.

Primary arthritis is much less common than that secondary to an osteomyelitic foci, and in the adult, as the epiphyseal cartilage is absent, we are more apt to have invasion of the joint by direct extension.

The portal of infectious entrance in osteomyelitis cannot be de-

terminated at times by reasons of the locality, and the slight local change produced by the infecting agent not being sufficient to attract the attention of the physician or patient.

The diagnosis in early cases, contrary to some statements, may be difficult, as pain may not be severe for several days and the first distinct local symptom being the adjacent joint change, thus distracting one's attention from the primary morbid lesion. Acute swelling of the joint may be the first marked symptom and cases are frequently for days treated as articular rheumatism, and when the infection is severe and the mental state dulled the case may be mistaken for typhoid fever.

In children and adults osteomyelitis may give rise to marked general disturbances without well defined local symptoms early, therefore in questionable cases we should carefully note the condition of the bone and joints.

The lessened danger to life and the saving from hopeless destruction of not only important bone structures but joints as well by prompt surgical interference is only made possible by early diagnosis. A swollen joint with or without trauma has a great probability of having for its origin a primary bone focus, however, it should be aspirated and the intra-articular fluid examined. If due to simple traumatic synovitis the fluid usually is sterile and rarely purulent. If due to gonococcus the demonstration of the same excludes the presence of osteomyelitis.

Symptoms of osteomyelitis in the beginning are sudden local pain becoming severe, throbbing and upon continued deep pressure there is elicited an increasing pain in the extremity of the shaft, usually near the epiphyseal cartilage line. Swelling of the soft parts may appear early and the adjacent joint become tender, hot and swollen.

This sometimes is due to the edema of the adjacent inflammation.

There is usually a prompt rise in temperature to 102° or 104° , and constitutional disturbances and evidences of infectious absorption usually appear early.

Delirium is not an uncommon factor, oftentimes however, mild.

In differential diagnosis it is well to remember the following points: osteomyelitis occurs in the diaphysis with very few exceptions, whereas in tuberculosis there is a primary focus found in the epiphysis. When osteomyelitis occurs in the epiphysis, spontaneous separation is common.

Acute rheumatism is polyarticular, although one joint may be especially involved; osteomyelitis is monarticular with early marked redness and edema, and almost constant bone tenderness.

Gonorrheal rheumatism may affect one joint. Early symptoms may be severe and only the characteristic bone tenderness is want-

ing. History of presence of infection may usually be determined and bacterial examination of joint fluid may be characteristic.

The monarticular so-called rheumatism affecting young adults should be carefully considered as regards the possibility of acute osteomyelitis. From typhoid fever the differential diagnosis can be made from pain and local symptoms, high leucocyte count, sudden onset, and absence of Widal reaction.

In the treatment of acute osteomyelitis nothing less than thorough operative procedure is worth dignifying by the name of scientific therapy and each case has its own particular indications but in general there is strongly indicated early drainage by means of an incision down to the bone surface, drill puncture to localize the focus, and free chiseling and curettment to provide vent for the infected area, relieving the pus pressure and stopping the advance of the necrosis as well as symptoms of infection.

If the joint is affected and if the effusion is purulent then an arthrotomy and irrigation with drainage is indicated. However, if not promptly recognized and treated the following clinical picture may be observed: history of prolonged siege of fever, severe pain, nasty poultices, and other like inefficient treatment, later abscess forming in soft parts, superficial incision, excessive bone involvement with fistula, and extensive involucrum, secondary arthritis with joint ankyloses. The best operative result in these cases, of chronic osteomyelitis cannot be compared to those of early operation.

Illustrative of some of the phases of osteomyelitis I select from my cases the following:

Case I. Elmer S., age 3 years, Pittsburg, Kansas, Was brought to me with the following history; 6 weeks previous had been taken suddenly ill with elevation of temperature, slight chill, followed by an eruption which the father said he supposed may have been a "scarlet rash." After the first few days the child did not appear very sick but was indisposed for about two weeks during which time desquamation occurred thus characterizing this affection as having been scarlet fever. About ten days after apparent recovery the child complained of severe pain in the left lower leg, this continued in varying degrees of severity until the date of my first observation. On examination I found the temperature 102.5°, pulse 110, respiration 40, an oblong circumscribed tumor just below the proximal extremity of the tibia, tender on pressure with no involvement of the knee joint and the little patient was able to use the limb to a moderate degree without evidently increasing the pain. Diagnosis of acute osteomyelitis given and operation advised. Incision over the anterior border of the upper extremity of the tibia revealed an extreme amount of periosteal hyperplasia with sub-periosteal dis-

section, no definite sinus found leading into the bone structure, but a softened area was determined in the upper part of the diaphysis, and by the use of a chisel and sharp curette was able to clear out an irregular conical cavity approximately three fourth's of an inch by two inches; this was packed with washed iodoform gauze and the limb immobilized.

Much to my surprise on visiting the patient the morning of the following day I found the respiration 40 with large, moist rales quite general over the left lung, temperature 101°, pulse 140, dyspnea marked and extreme restlessness of the patient.

Death occurred during the evening and as I was unable to obtain a post-mortem can but offer the opinion that this patient died of pulmonary fat embolus and well illustrates one of the complications that may arise affecting the final outcome.

Case II. Fred C., age 4, Seever, Iowa. Found family history negative, personal history negative, except that two months previous had a slight infected wound of the lower limb. This in a short time healed, but was followed in a few days by a condition diagnosed by the attending physician as acute rheumatism. The usual treatment instituted, comprising poultices and general non-committal medication. This treatment proved to be brilliantly effective for a time, as a result, so stated, the trouble came to a head and after marked pointing below the tubercle of the tibia, the superficial abscess was opened and drained, with the statement that the trouble would rapidly clear up. However, a sinus persisted and whenever occluded by cauterization or other measures used to heal the sore there would be a resumption of temperature and a characteristic clinical picture of sepsis until the pus tension would produce drainage.

This condition of affairs continued and on examination I found a sinus immediately below the tubercle of the tibia discharging a small amount of sero-purulent fluid. Was able to determine denuded bone, and advised operation, which was performed. Free incision through the periosteum, which was found thickened and freely dissected from the underlying cortex, and on the surface were numerous minute openings from which exuded an oily, purulent material.

The cortex of the bone was irregularly eburnated, rendering free chiseling quite difficult. However, at the completion of the operation it had been necessary to channel the entire shaft from the superior to the inferior epiphyseal cartilage, removing three fourth's of the cortex, thus leaving a nearly flat layer of bone with numerous perforations thoroughly curetted out as an auxiliary splint and basis for new bone formation. The cavity was thoroughly sterilized and periosteum with overlying soft structures inverted and thus sutured. Numerous iodoform gauze drains inserted and the limb

fixed in plastic splint. At the end of two months this patient was discharged. Examination of this patient five years later shows no perceptible difference in the two limbs, either as to length or functional value. This non-interference with development was made possible by preserving intact of both epiphyses.

Case III. John B. M. Mystic, Iowa, age 30. This case was seen at his home by courtesy of Dr. Ritchie. Family history was negative; about one year previous was injured in a railroad accident, sustaining a compound fracture of the left ankle, which became infected, with subsequent necrosis for which he was operated several times and was discharged from the service of a surgeon of national repute about one week previous as cured.

Examination, temperature 101, pulse 90, general physical state fair. Examination of ankle through a small drainage incision made the day previous demonstrated the presence of diseased bone and operation advised and performed the following day. Incision made over the internal and external malleoli demonstrated extensive necrosis, involving the tibia and fibula and numerous tarsal bones. In fact, the extent was not at this time determined, as it was seen amputation only would be justifiable and the operation concluded establishing free osseous drainage. From this operation the patient received no marked benefit, and the patient was again anesthetized with the understanding that amputation would be performed at the lowest point possible found justifiable. Lateral flap amputation 1 1-2 inches below the tubercle of the tibia showed involvement of the cortex and bone marrow, and exploration indicated invasion of the epiphysis of the tibia. Lateral flap amputation immediately done four inches above the knee and cortex found healthy, but medula necrotic. The medullary canal of the femur curetted for its entire length and packed with iodoform gauze. This was followed by free drainage for some time and patient discharged from the hospital some weeks later after having made a slow but uninterrupted recovery and at the present writing there is no evidence of any recurrence.

In this case cultures taken from medullary contents showed pure cultures staphylococcus pyogenes aureus thus accounting for the insidious course.

Case IV. Mrs. Jennie M. City, age 26. Family history negative. Gave history of a slight needle wound of index finger received several days previous, to which no attention was paid. However, this continued quite tender for a number of days, and for a few days previous to consulting me the patient had experienced severe pain at the base of the proximal phalanx of the same finger. Temperature 103°, pulse 100. Marked tenderness on deep pressure of base of the above mentioned bone. No apparent involvement of the soft parts. On operation

found on incision of proximal phalanx a necrotic area at the base of the long bone with involvement of the medulla, and the same was thoroughly channelled, drained and improvement was apparent for a few days and then began having a resumption of the previous clinical picture. Two weeks later again explored under anesthesia and on finding extensive tissue invasion by the infectious process, amputated the index finger and at the same time drained the remaining metacarpal bone. This in turn required to be removed three weeks later, after which operation her recovery was uninterrupted and there has been no further involvement at the present writing.

HODGKIN'S DISEASE. ITS ETIOLOGY AND PATHOLOGY. RECENT INVESTIGATIONS IN ITS RELATION TO TUBERCULOSIS

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There has been much confusion and difference of opinion about what Hodgkin's Disease really is. Dr. Mallory¹ holds that, "It is a name applied to a clinical condition. Some of the cases turn out to be tuberculosis, a few are cancer or other malignant tumors. The majority of them turn out to be lymphoblastoma, a pure tumor formation". Hodgkin gave a very good description of it in 1832. Cohnheim called it pseudoleukemia, Paltauf called it lymphogranulomatosis, Benda called it malignes granulom. Under the last term and Hodgkin's Disease jointly Kurt Ziegler² of Breslau has written a very complete monograph in which he describes it as "a chronic infection, running a chronic course, with an affinity for lymphatic tissues, usually lymphatic glands, less often spleen and thymus, occurring at any age from nursing babe to old age, but most often from 20 to 35 yrs., twice as often in males as females." Many still regard it as a true neoplasm. Reed³, Mallory¹, Hertzler⁴, and others. Benda, Müllern and Grossmann state that the tubercle bacillus is an important cause but other infections may also cause this disease. In 1898, Sternberg⁵ worked out 15 cases showing a close relation to a modified form of tuberculosis. This work was not generally accepted. Brilliant work within the past twelve months seems to have proven its infectious nature.

O Meyer and K. Meyer⁶ have been able to fulfill Koch's law. They obtained the "Much granula" in pure culture and repeatedly produced the disease in guinea pigs. In case No. 1, ordinary tuberculosis was excluded clinically. Three pigs were inoculated, two of these died in three months of tuberculosis. Ten more pigs were in-

oculated, these became diseased with glandular enlargements in the course of seven months. No bacilli were found. Case No. 2, girl aged 20, ill for past four years with glandular enlargements and anemia. Autopsy showed enlargements of lymph glands everywhere but no trace of tuberculosis. Granulation tissue with giant cells was found in lymph nodes, lung and spleen. Four pigs became ill in two, four and five months after inoculation with the enlarged lymph glands. Case No. 3, three pigs showed typical tuberculosis. The spleens of case No. 1 and No. 3 gave a positive culture on blood serum in four weeks. This is a short acid fast bacillus. These cultures were inoculated and produced a more or less atypical tubercular lesions. These authors call attention to the difference in known tubercular lesions as lupus and lupus erythematosus. (Cit. Bloch D. M. W. No. 17, 1911.) E. Heinz⁷ used the antiformin method, in the resulting sediment he found tubercle bacilli and much granula. Guinea pig inoculations and positive cultures proved them to be tubercle bacilli of the human type. H. Löffelmann⁸ treated the pathological tissues of seven cases with antiformin according to Uhlenhuth. In six of these cases he found tubercle bacilli in the seventh no typical bacilli but the Gram positive granula of Much, E. Fraenkel & Much⁹ found the Much bacilli or the Much granula in twelve out of thirteen cases. Many others reports of a like nature have been published in the past year but contain nothing essentially different from the above. From the above one might conclude that Hodgkin's Disease is an infection due to a modified strain of tubercle bacilli whose exact relation to the usual form has not yet been established.

Pathology. The structure is essentially that of inflammatory granulation tissue. Very early there is a hyperplasia of lymphadenoid tissue followed by a destruction of lymph cells, increase of connective tissue, infiltration of leucocytes, especially eosinophiles, increase of endothelial cells, edema of surrounding tissues but the center does not degenerate as in tuberculosis. The growth is due to endothelial and reticular cells. A variable number of mitoses, more or less infiltration and the endothelial giant cells or the so called granuloma cells. The main features being increase of leucocytes and proliferation of endothelial cells.

Clinical course in the first stage. The beginning is seldom noted, as an insidious enlargement of a group of lymph nodes. This begins in the side of the neck in 50 per cent, but may be primary in the axilla, angle of jaw, supraclavicular, back of neck, inguinal, mediastinal, thymus, retroperitoneal in the order given. There may be a solitary mediastinal or retroperitoneal tumor. There are no subjective symptoms unless there is pressure on nerves, bloodvessels or important organs. Tumors may grow slowly, remain stationary or become smaller. There may be pruritus, eczema, cough, diarrhea.

Second stage is that of general infection group after group becomes involved, the spleen enlarges, anemia, loss of weight, cachexia. The skin may become dry, loose, atrophic, and of a yellowish brown color. There may be hyperkeratosis, ichthyosis and loss of hair. Irregular remittent fever, recurrent sweats, chills, pains. Blood examination shows absence of leukemia and more or less secondary anemia. There may be dysphagia, dyspnea, icterus, edema, ascites, pleural effusion, paresthesia and algesia. There are two types of the disease one where the peripheral and the other where the retroperitoneal structures are involved. Course from one to seven years.

Work confirming the above in the main has been reported by E. Rosenfield, Hirschfeldl, Jacobsthal, Pick, Luce, Simmonds, Dietrich, Chiari and Oppenheim.

Summary. It would seem that when we take into consideration the amount and character of the work referred to above that we are justified in considering Hodgkin's Disease as a form of tubercular infection. It has been possible to obtain new light on this subject by means of improvements in technic, viz:—the antiformin sediment method of Uhlenhuth and the staining method of Much.

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THE DIAGNOSIS OF DISEASES OF THE NERVOUS SYSTEM IN CHILDREN.

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The diagnosis of diseases of the nervous system in children, is of itself complex. While the outward manifestation of forms of neurosis may be very apparent, the diagnosis of the causes resulting from these complexities, may be very misleading. Only by a systematic study of such diseases can a definite diagnosis be reached. The causes of occasional lesions may at times be seen at a glance, but more frequent it will be found intermingled with complexities involving many times, organs, systems, or tracts least expected. The nervous equilibrium of a normal healthy child is very delicately balanced. Due to this delicacy, very slight deviations from the normal in any system, organ or tract, this normal equilibrium may be easily destroyed. For this reason, neurotic manifestations will be found even in earliest infancy.

Recent physiological research has shown that sympathetic nervous elements are directly connected with every part of the body, and therefore, the peripheral effects are not entirely dependent upon communicating branches. For this reason and through the under-developed nervous control of the child, slight irritations though far remote from the site of outward manifestations, will produce symptoms many times misleading.

Movements occurring independent of sensation, we call excitomotor, and are completely under the control of the will. Those guided or accompanied by sensations, we call sensori-motor. All reflexes are involuntary, but under and subject to some control. Unequal equilibrium, in some one of the powers, either of motion or control, will result in some neurotic disturbance. The etiological factors producing such equilibrium may for brevity be divided into three classes: 1st, hereditary. 2nd, lesions. 3rd, irritations. These three classes will of a necessity intermingle. Heredity plays the most important part in the nervous development of the child. It is manifested early in the life of an apparently healthy, normal child, and neurotic diseases may be found present at birth. Alcoholism in parents often produces a defective organization of brain structures in the descendant. Such will manifest itself in more severe forms, as idiocy or epilepsy.

Wildermuth in a study of 145 cases of early epilepsy, found inherited tendencies in 49, 21 of which a definite history of alcoholism was found. He also found the tendency of transmission through mother greater than that of father; 30 1-2 per cent against 29 per cent, and in both cases both parents effected, 63 per cent.

Syphilis has an important place and its results are seen usually in some graver type of degeneration. The degeneration may not

necessarily be found in the nervous system. Degeneration may be in the vascular system, producing an imperfect blood supply to some nerve center, giving rise to results similar to some form of trauma, and be classed as such. Oft times in the severe forms a definite diagnosis cannot be made without a sero-reaction of the mother. This is of importance because conditions of syphilis in women are found to be latent in about 75 per cent of cases. Without the sero-test we may properly diagnose the case of idiocy or hydrocephalus or hemiplegia, but the causative agent more important has not been found. Milder nervous peculiarities will be found transmitted with great ease. Family characteristics of the entire individual and nervous temperament of the parent may be found in the descendant. As illustration of this:

Case 1. Ruth J. 5 years of age. Patient was brought to the office complaining of severe cramping pains in the right hand extending to the elbow. Family history negative except father, who gives history of extreme nervousness. Past history of child negative. Electrical tests negative. Physical examination was that of a normal healthy child, with the exception of adenoids and tonsils. A diagnosis of neurotic disturbance due to the tonsils and adenoids was made. These were removed with the result that the pain was limited to the middle finger, but with increased severity only appeared during meal time. Gastric disturbances were suspected but found negative. Patient would cry out screaming with pain. The father by rubbing could, within a short time, relieve the pain and patient finish the meal with comfort, only to return at the next meal. No results following, the child was placed at opposite side of table, beside the mother, and orders given if pain returned mother should rub the arm in place of father. By the third meal pain completely disappeared only to return one week afterwards when placed beside the father. The previous treatment was repeated and no pain returned in the last six months. Cases such as this, without a definite family history, will be misleading and improper diagnosis easily made. Nervous conditions of the pregnant mother should be carefully guarded and all irritations so far as possible, be removed. Injuries during delivery, especially instrumental, may result in lesions, not becoming manifest for some time.

Lesions. These may be cerebral, bulbar, spinal, or peripheral; obliquities of functions may come from continuous or long standing irritations or pressure, degenerations, trauma, etc., but the diagnosis of such are usually direct in line with the area or group of muscles supplied by same. By our knowledge of the central and general nervous system, by the use of reflexes and the structure of the reflex arc and by electrical changes and trophic disturbances, such lesions may be located with reasonable accuracy. Diagnosis may occasionally be made by removal of the cause, such as pressure as the

result of injury. Such lesions may oft times only be temporary, as caused by hemorrhage or edema, anemia etc.

Irritations. In this class we may place many or most of our disorders giving us greatest trouble in general work. Too often are the cases treated for the resulting reflexes, the real cause remaining hidden and untouched. Relief may be obtained temporarily only to return when treatment is stopped. Excessive or long continued irritations at some one point may in time result in complete lesions, and in this way clear up the diagnosis, but cases such as these give us fatal results, for if found early, relief may be obtained. These irritations may be divided into central or nervous and peripheral or somatic. In the central's first, we find in infancy and childhood more fluid in the sub-archnoid space, this by the closing of the foramen Magendie, causing an excessive amount of fluid in the ventricles of the brain, producing hydrocephalus; second, the delicacy of the blood vessels in the pia mater of infants predisposes to easy trauma and irritations: third, the rapid growth of the brain during the first seven years, especially the first, is of itself a predisposing irritation causing functional derangement. For this reason, convulsions occur most frequently in early infancy and are rarely seen after the seventh year.

But of all the manifold predisposing causes of neurosis in children, the most important is the natural instability of the nervous centers characteristic of early life, and this associated with the undeveloped voluntary centers of the cortex inhibition is very slight, if present at all, and slight irritations are easily and greatly magnified, for example, diseases producing high fever, quickly resulting in convulsions.

Among the peripheral irritations we find headaches, migraine, stammering and stuttering, chorea, hysteria, multiple neuritis, etc.

Among the reflex causes of headache, we may find anemic conditions, chlorosis in young girls, eye strain, and occasional uterine or ovarian disturbances. Headaches may be due to general systemic disturbances resulting from auto-intoxications or fecal impactions or intestinal parasites. Among causes of local origin of headache may be found nasal neoplasms, sub-orbital neuralgia, diseases of the middle ear, etc. Among causes of migraine, we usually find overwork in school, poor air and ventilation, with unsanitary mode of living, gastric disturbances, etc.

Chorea we find as direct cause resulting from over-study, excessive loss of sleep, or it may be result of infectious diseases. Among the reflex causes will be found phimosis, delayed menstruation, pin worms, frights, and occasionally masturbation, etc.

In all these conditions we cannot be too careful in first obtaining a complete and detailed family history of the child.

If the lesion can be definitely located by its resulting symptoms,

the causative factor may be found in the parent, and treatment for the same should be insisted upon before the birth of another child should be allowed.

So far as possible absolute diagnosis of the cause of any of the neurotic conditions should be made before treatment of the resulting neurotic disturbance is continued too long a time, for by so doing we may hide the only guide to the primary disturbance.

Case. Earnest S., age 11 years, brought to office complaining of asthma. Dyspnea very marked, respiration ranging from 20 to 30 per minute. Heart action irregular, increasing with rapidity with decrease of respiration. Gave a history of the trouble dating back four years. Relief by the use of asthmatic remedies for two or three days was obtained. The lungs were found to be clear, with the exception of increased vesicular sound due to the exaggerated respiratory movements. The heart irregular, but no lesions could be found. Diagnosis of functional heart as result of intestinal toxemia was made. Cathartics and vermifuges were crowded with the result that fourteen *ascaris-lumbricoides* of extremely large size, were obtained. Within a week after the passage of these the asthma completely disappeared, heart became regular except when excited, and the condition has not returned within the last six months.

PRACTICAL POINTS ON BLOOD PRESSURE*

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We haven't been to a medical meeting, nor read a medical Journal for many months where some one does not bring up the subject of blood-pressure, usually increased tension in the arterial system.

We didn't choose this subject because we know much about it, nor do we assume that the listener should be enlightened on it. Rather the study of blood-pressure has been forced upon us, because the statements as to what does exist in the way of blood pressure are conflicting.

Nearly all Insurance Companies require statements in regard to the blood pressure of the individual examined. The companies have found the percentage of deaths from apoplexy, nephritis and organic heart disease to be twenty-six per cent of all the deaths in the past nine years. The percentage of deaths from apoplexy has increased from seven percent in 1900 to nine and one-half percent in 1908. Organic heart disease has advanced from eight and six tenths percent in 1900 to ten percent in 1908.

In the text books on diagnostic methods, we find the manner in which we may estimate vascular tension by the use of the finger. We can see that it would take a great deal of practice before any degree of accuracy could be reached. We are not advocating any blood

*Read before the Iowa State Medical Society, 1913.

pressure machine, but Cabot says;—"If I could have just one instrument of diagnosis, it would be a stethoscope, and if I could have but two, the second one would be a blood pressure machine."

Under normal conditions, four chief factors co-operate in producing the conditions of pressure and velocity as we find them. They are:—

First:—the heart beat.

Second:—the resistance to the flow of blood through the vessels, especially the peripheral resistance in the region of the small arteries, capillaries and small veins.

Third:—the elasticity of the arteries.

Fourth:—The quantity of blood in the system.

If we picture the system at rest, with a definite quantity of blood distributed equally throughout the vascular system, the side pressure is every where the same, because the vascular system is sufficient to hold the entire quantity of blood, without distention of its walls.

If now, the heart begins to beat with a definite rhythm, and discharges a definite quantity of blood at each beat, the whole mass will be set in motion, the arteries receive the blood more rapidly than it can escape through the capillaries into the veins, and consequently, it accumulates on the arterial side until an equilibrium is reached; that is a point at which the elastic recoil of the entire arterial tree suffices to force through the capillaries in a unit of time, as much blood as is received from the heart during the same time. Change in any of the mentioned factors, will necessarily change the blood pressure. That is, an increase in the rate or force of the heart, increases the pressure. The reverse also would be true. An increase in the width of the vessels, decrease the pressure, or a decrease in the width would increase the pressure; a diminution in elasticity because it changes the caliber of the vessels, and increases the pressure. Also a loss of blood reduces the pressure. So much for the physiology of the normal blood pressure.

Here, it become evident what a complex question a change in blood pressure becomes. It involves all the conditions that change the force and rapidity of the heart, all the conditions that in any way influence the vaso-constrictor and vaso-dilator nerves; also the conditions of change in the elasticity of the vessel walls, and still, we have not accounted for the long list of possibilities where there is a change in the amount of blood that is in circulation. Several of these conditions may exist at the same time, which would change the entire picture. That is why the statements we hear and read, are often conflicting. We can not go over the entire list and give what might be expected to be the pressure in each specific instance. A large percent of the individuals who seek the physician are men and women past middle life. We are prompted to ascer-

tain their blood pressure, also the pregnant woman, with symptoms of headache, pain in the stomach, etc. The individuals past middle life prompt us to take their blood pressure, because they have subjected themselves to over eating or over drinking for a period of time, to long continued worry or excessive muscular labor, they often suffer from variations in internal secretion, etc. If the pressure is not normal, it is high or low, or variable.

In general, it is easy to think of blood pressure as being low in all conditions of exhaustion, as surgical shock, neurasthenia, tuberculosis, anemia, and failing circulation. Whereas, in disease of the heart and kidney, the toxemias and cerebral diseases, we expect to find an increased tension. It must primarily be understood that a continuous high or low pressure is abnormal. We know the most frequent causes of an increased pressure are intoxications, toxins that are retained in the kidney, and we know of the high pressure in lead poisoning. But blood pressure observations are of interest largely:—first, disease of the heart, valvular lesions; second myocardial degeneration; third, angina pectoris and neurosis of the heart.

Second; the symptom complex, known as cardio-vascular-renal disease.

Third; toxemia of pregnancy.

Fourth; cerebral lesions.

In valvular disease, sooner or later, we have aortic regurgitation. Here we can make a diagnosis by finding the pulse pressure, which is great in this instance, because we have a sudden and great rise followed by an equally sudden and great fall. If arteriosclerosis is present, this phenomenon is further accentuated because of a lack of elasticity.

In the development of cardiac symptoms in the absence of definite lesions in persons of a syphilitic history, over indulgence in alcohol at the table, in tobacco, mental strain, worry, we look upon this condition as presumptive evidence of chronic myocarditis, and this view is strengthened if an increase blood pressure is present.

However, the blood pressure in disease of the heart is of value mostly as an indicator to the condition of the myocardium, it demonstrates the effect of therapeutic measures and is a guide to the general management and to prognosis.

There are the cardiac neuroses. In complaints of the heart, the occurrence of a low pressure when an insufficient heart muscle can be excluded is indicative in almost all cases of a neurosis, and there can exist a genuine nervous heart weakness, which is sometimes accompanied by albuminuria and edema.

In angina pectoris the pressure is variable, but when high the attacks may be lessened in severity and in number, or even prevented if treatment is directed toward lowering the pressure.

The symptom complex, known as cardio-vascular renal disease,

is a vicious circle, wherein the heart, blood vessels and kidneys are involved. We can separate and treat arteriosclerosis and chronic interstitial nephritis as two distinct conditions, the contracted kidney is but the terminal stage of arteriosclerosis. Arteriosclerosis does not necessarily have a high tension. It may be normal or even low, because the tone of the heart muscle is disturbed. Normal if the splanchnic area is not involved. But as soon as the kidney is involved, the blood pressure comes up.

The toxins in the blood due to over eating, over drinking, etc., act as a tonic on the vaso-constrictors and narrow the blood vessel, this increases the blood pressure, this interferes with the nutrition, and alters the pressure in the kidneys. If this lasts long enough, the result is arteriosclerosis, and nearly all continuous high pressure, where aortic regurgitation can be eliminated, means chronic interstitial nephritis.

In fifty-three cases of hypertension, above one hundred and sixty millimetres of mercury, some kidney lesion was present in 71 percent, and in three fourths of the cases, the lesion was an atrophic lesion. However hypertension exists in both acute and subacute nephritis. In seventy per cent arteriosclerosis was present.

A blood pressure of 200 mm., or over, always means nephritis or arteriosclerosis. About one half of the cases where the pressure is less than 200 mm., are cases of cerebral lesions, the other one half are valvular lesion, and always involve the aortic valve.

Hypertension usually indicates well marked cardiac hypertrophy, a sudden or marked rise in blood pressure means an uremic crisis, a sudden and marked fall means a failing heart. Patient with kidney lesions, which will not respond to treatment, usually have uremia or cerebral hemorrhage.

Blood pressure in pregnancy. The pressure in a normal non-pregnant woman does not vary much from 112 mm. In a healthy pregnant woman, the average pressure is 118mm. The year book on obstetrics says, "that 70 percent of pregnant women have traces of albumin in the urine from the second month on, which increases somewhat during the term." A slight increase up to 124 mm. may be expected up to the last month.

The toxemia of the first months if accompanied by pernicious vomiting, is low, but the blood pressure of the severe forms of toxemia, viz:—eclampsia with albuminuria is always high and is the earliest sign of toxemia. As far as it is possible to make definite statements about these cases, we would say that a blood pressure of below 125 mm. may be disregarded, one of 125 to 150 should arouse our suspicion, and the patient be given moderate eliminative treatment, a pressure over 150 will probably require induction of premature labor. The foregoing is taken from Hirst.

Conclusions:—

First:—without a great deal of experience, it is practically impossible to estimate the pressure with the fingers.

Second:—it is easy to buy a machine, and estimate the pressure, but difficult to interpret the finding, because several factors enter into the normal pressure, change in one or more than one may be the cause for the finding.

Third:—in general low pressure is found in any condition of exhaustion. High pressure refers to the patients' heart, kidneys and cerebral lesions.

Fourth:—in disease of the heart, blood pressure indicates to us the effect of therapeutic measures and is a guide in management.

Fifth:—in complaints of the heart, when the heart muscles can be excluded, with a low pressure, we have a cardiac neurosis.

Sixth:—in arteriosclerosis, the pressure is not always high.

Seventh:—in chronic interstitial nephritis, the pressure is high.

Eighth:—in kidney lesions when the pressure will not come down with treatment, develop an uremia or cerebral hemorrhage.

THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

EDITORIAL

The Reductio Ad Absurdum of Vaccine Therapy.

Seven years ago when the first clinical reports on bacterial vaccine therapy were made in the United States an attitude of skeptical pessimism was encountered in the medical profession. To-day a reaction quite to the other extreme is manifest. In fact, this "positive phase" of optimism has carried a valuable therapeutic procedure to limits little short of ridiculous. Commercial expediency on the part of establishments marketing bacterial vaccines, and ignorance on the part of physicians generally as to the limitations of this branch of biologic therapy are to blame for this condition. Manufacturers of bacterial vaccines have multiplied in number beyond a reasonable necessity, and competition between them has led to the marketing of products whose therapeutic value is far from assured, in order that a list of numerous "varieties" may be offered to physicians through advertising claims much too promising. Bacterial vaccines may soon be expected to be found on druggists' shelves like canned goods in a grocery store and at approximately the same prices. Even price-cutting has entered into the commercial scramble—except in the case of semisecret proprietaries. Because of the uncertainty underlying the identity of the offending microbe in many infections or because of the occasional mixed or secondary infections, combinations of bacterial vaccines theoretically justified by the "shotgun prescriptions" of other days are offered. Potent bacterial products producing toxic reactions of great severity, secret as to their exact composition and vaguely aimed at a mixed infection, are in the field, recommended to the medical profession through persuasive advertising literature or through the oral representations of detail men with no technical knowledge of immunology or practical experience in therapeutics. It follows that the use of these variously compounded bacterial derivatives is an unscientific confession of ignorance as to the specific cause of a given infection, and that the indiscriminate employment of these products must not only be ineffective but fraught with danger. Even when no more tangible harm results, the time in which an appropriate autogenous vaccine could be made and used is often wasted. In this chaotic state of affairs it is well to recall the warning by the pioneer of practical vaccine therapy, Sir A. E. Wright, who in closing his Toronto lecture said: "As a natural outcome of such development in medical science a new type of practitioner would appear, namely, the immunizator. He would say, 'You are infected with a particular microbe and my business is to find out the microbe, make a vac-

cine from it and inoculate you and bring up the resisting power of your blood." For such skilled service you will require a man who spent years of study to master the technic; to know how to make which are the most important microbes, to know how to isolate them, and most of all, a man with sufficient experience and ability to apply all these things.—(Journal of the American Medical Association.)

Extra-Uterine Pregnancy.

Dr. Farrar Cobb of Boston has made a careful study of 137 cases of tubal pregnancy at Massachusetts General Hospital, with the view of giving information as to the wisdom of immediate operation in desperate cases of hemorrhage and arrives at the following conclusions:

1. More than 33 per cent of extra-uterine pregnancies occur in young women who have never before been pregnant.

2. Salpingitis, or pelvic infection, is not an essential or frequent causative factor.

3. Most of the cases of complete rupture with alarming hemorrhage occur in the early weeks, often in the first month; these are the causes that are rapidly fatal unless operated on. Cases that have gone two months or more are those that furnish the greatest number of non-emergency cases.

4. Cases of sudden, severe rupture, until signs of marked intra-abdominal hemorrhage are present, often simulate other grave abdominal emergencies with signs of extreme hemorrhage, operation should be done at once without waiting for a possible reaction.

6. In the less severe cases of tubal rupture, without signs of marked hemorrhage, a correct diagnosis is often difficult or impossible.

7. The menstrual history cannot be depended upon; many of the most alarming cases had skipped no period.

8. The character and location of the pain may vary within wide limits.

9. Tubal abortions are nearly as frequent as tubal ruptures. Cases of tubal abortion seldom give a history of skipping a menstrual period, but a history of continued slight flowing or dribbling since the last period.

Dr. J. C. Bloodgood of Baltimore in a very important paper before the Section on Surgery, Pennsylvania State Medical Society, published in *Annals of Surgery*, May 1912, draws attention to some important facts in relation to the elements of safety in surgical operations which are largely overlooked by practitioners. We have considered too much the condition for which the operation is undertaken, and the general condition of the patient—too little. When

the diagnosis of a hernia or an enlarged prostate or a fibroid uterus is made, we proceed at once to operate with unquestionably too high a mortality. We have not measured the patient's resistance sufficiently; perhaps have only made a superficial urinalysis. For convenience Dr. Bloodgood divides operations into two classes; first, for the relief of conditions which of themselves are producing little or no depression of the individual, and second, for conditions which are of themselves depressive. In the first group, therefore, the operation adds a burden but takes none away, while in the second group although the operation itself burdens for a time the individual, yet it relieves the individual of a burden which he was carrying before the operation. In the one case the operation creates a depression; in the other it relieves a depression; for example, a strangulated hernia.

Aside from an operation of emergency, the question comes up as to the general condition of the patient, and the local condition which the operation is intended to relieve, and what is the best course to pursue. Dr. Bloodgood appears to think we have not got far enough away from the past, as to the question of investigation of the general and local conditions of our patients; the question of operative dangers and post-operative dangers and post-operative discomforts and complications.

Dr. Bloodgood says among many useful things: "Emergency operations should be performed earlier and operations which are not of this type, not as often undertaken without the proper pre-operative study and treatment. In the pre-operative diagnosis, instruments of precision should be employed—the x-ray, the blood pressure apparatus—all of the clinical and laboratory examinations should be made; the patient should pass through this in such a way that no fear is excited and that it does not become an ordeal. During this period of diagnosis, therefore treatment is by no means to be neglected."

Preventive Medicine. Prevention by Careful Supervision.

Preventive medicine is developing in the public consciousness the necessity for careful medical supervision of people who are not sick. That there should be periodic clinical examinations of people apparently well is becoming an established fact. More and more does it become apparent that the general functioning of the human body should be supervised by trained medical men. Laboratory examinations of the blood and urine, together with clinical examinations of the heart, kidneys, lungs and other organs are demanded from time to time by wise men and women.

The tendency is specifically in this direction and it should increase more rapidly in the future than it has progressed in the past. Many people wait until ill before consulting the physician or the

specialist to discover at last that while they were procrastinating the physical defenses were being undermined in such way as to make recovery of health impossible: that much heart disease and arteriosclerosis could have been avoided had there been periodical examinations of the excreta, particularly the urine. It is now believed that the danger signals hung out by these excreted products would if seen in time obviate the disaster which follows.

At the International Congress on Hygiene and Demography held in Washington, in 1912, quite a good deal of attention was paid to this phase of preventive medicine. The elimination of wastes from the body, especially the bowel tract and the kidneys, formed an important part in the discussion. That the excreted urine contains the hieroglyphics which may indicate the true condition of the blood seems to be quite successfully maintained. There is this to be said without discussion as to the merits of this particular phase, that many would avoid physical deterioration and early overthrow if there had been established early in life and maintained over them wise medical supervision. But in middle life the importance of such supervision is still increased, due to the fact that the machinery begins to show some wear and the functions become less accurate and trustworthy.

I have maintained, and consistently I believe, that the ideal state which must be reached in the whole program of prevention is that of carefully supervised bodies, protected as far as possible against invasion of toxins and infections rather than bodies rent by pain. It is idle to contend when an organ begins to improperly function that it can ever be placed again in an absolutely normal condition. I do not press the technical discussion, but from the standpoint of a layman there can be no doubt that the normal efficiency can never be re-established even though the organism may have improved. Let the education of the public be along preventive lines and emphasize especially this most important feature of careful medical control.

A Revised Estimate of the Economic Cost of Tuberculosis.

In 1908 before the International Congress on Tuberculosis at Washington, D. C., Professor Irving Fisher of the Department of Economics of Yale University, and President of the Committee of 100 on National Health, presented a paper on the economic cost of tuberculosis in the United States.

From recent studies made of the topic Dr. Fisher has revised his figures and presents a new study in which he estimates that there are at least 155,000 deaths from tuberculosis, all forms, occurring annually in the United States. To briefly review his paper,

he places the minimum estimate of mortality losses which these deaths represent as follows:

| | |
|--|-----------------|
| Loss to persons themselves | \$665,000,000 |
| Of this amount, through sickness | 145,000,000 |
| By death | 520,000,000 |
| Loss to others, \$570,000,000, divided as follows: | |
| By sickness | \$ 220,000,000 |
| By death | 350,000,000 |
| Or a total for all of | \$1,235,000,000 |

These figures so stagger humanity. It is impossible for the human intellect to grasp their enormity, and while various economists following different routes arrive at somewhat different estimates, yet summed up they virtually arrive at the same economic cost.

It is idle to deny that tuberculosis is the cause of the greatest economic waste of any preventable disease in the United States, and it is great folly indeed for an intelligent people to tolerate this scourge. Iowa is rapidly moving toward the control of tuberculosis. It may not come immediately but it will come because our people are studying the relations of this disease to the various great social problems, especially the financial waste involved.

Subcutaneous Rupture of the Diaphragm.

An Experimental and Clinical Study. By. E. C. Riebel, M. D., Chicago. (Journal Surgery, Gynecology and Obstetrics.)

This subject comes up occasionally in accident cases and any definite observations are deserving of special notice.

"A search of the literature shows that the number of reported cases is not great, while one rarely finds a case which recovered. The scarcity of published cases does not indicate that the occurrence of this condition is so rare, for a personnel communication with a number of surgeons engaged in accident and emergency work revealed the fact that each one had one or more of these cases. I wish to draw attention to the sharp difference between open and closed diaphragmatic wounds. The former are rarely associated with immediate prolapse of abdominal organs, excepting the omentum, because as a rule the opening is too small, operative interference is usually successful, while in the subcutaneous tears of the diaphragm, which are usually large, a prolapse is the rule, and the outcome, with or without operation, as mentioned above."

Dr. Riebel relates ten cases in addition to his own, nine of which died; thus of eleven cases, one recovered. It is to be noted these were cases of subcutaneous rupture of the diaphragm and not incised or punctured wounds.

Reorganization of Medical Faculty.

The reorganization of the University of Minnesota School of Medicine, recommended by President Vincent, is under way. The faculty of the medical college met January 15, and presented a collective resignation. The reorganization plan calls for a reduction of professorships and instructorships by about 50 per cent, while the half-time lecturers engaged in practice in St. Paul and Minneapolis are also to be dropped from the faculty roll. The resignation carries with it no discredit to the instructors, but has been recommended in order to increase the efficiency of the school and perfect the machinery of instruction.

University of Illinois Again Gets Medical School.

The College of Physicians and Surgeons of Chicago again passes under the control of the University of Illinois. This time it is a gift to the state institution partly by the stockholders and partly by the alumni who purchased the stock not donated. The medical school has for several years held a contractual relationship with the University of Illinois, but that relationship was cancelled last spring. By the present transfer of all the stock, however, the medical school becomes an organic department of the University of Illinois.

Matters of Interest to the Medical Profession Before the Last Session of the Legislature.

For the information of members of the State Society, we are printing in this number the new State Board of Health Bill, which will be seen is quite a change from the law formerly in force. Undoubtedly this bill will bring about a greater efficiency on the part of the state board than under the old law. Very much will, of course, depend upon the wisdom of the Governor and Council in selecting the proper men for places on the Board. Drs. Cole, Steelsmith and Trumbaur, members of the Legislature, were largely instrumental in securing this bill, and should in the main be entitled to the credit thereof. The good opinion of the Legislature of the above named representatives, is shown by the fact that the Legislature practically passed this bill unanimously in both houses. Credit should also be given to the legislative committee of the House for active work upon this bill, and it should be said here that our old friend Chas. Miller, worked for the bill and is entitled to some degree of commendation from the profession.

We are publishing also a joint resolution which received the endorsement of the Governor and passed both houses of the Legislature unanimously. These resolutions are largely the work of the Secretary of the State Board.

It seems to the Editor of the Journal that the profession of Iowa have little to complain of in relation to the action of the Legislature during its last session, as no bills were passed that were of-

fensive in their character or could in any way reflect upon the character and dignity of the profession.

Malpractice.

It will be seen from the following note taken from the Journal of the Indiana State Medical Association for February, 1913, that we are not alone in trouble from malpractice suits. When the Indiana State Medical Association adopted the protective feature and made an appropriation of 75 cents per member, to create a fund for its support, we intimated that from our experience the fund would not accumulate very fast. We are now wondering if \$2.00 per member will be sufficient.

"Malpractice suits seem to be on the gain in Indiana if we may judge by the number of applications for medical defense that are coming in to the Committee on Medical Defense of the Indiana State Medical Association. Careful examination of the evidence submitted seems to indicate that the public is advancing more rapidly than some members of the medical profession in a knowledge of what constitutes the best and most scientific methods of treatment. It is also quite evident that some men in the medical profession are attempting work for which they are not fitted by education or experience. It has been quite well said by one of our leading educators that what we need in the medical profession is men with better training and a higher appreciation of ethical and moral obligations."

Pregnancy In Diabetes.

An interesting paper appears in the Journal of the New Jersey Medical Society by Dr. Richard Diffenback on Pregnancy in Diabetes. It is known that pregnancy but rarely occurs in true diabetes. According to Dr. Diffenback, Mathew Duncan was the first to collect a series of cases some 13 in number, with 8 deaths.

In 57 cases of pregnancy in diabetes collected by Offergeld, 30% died in coma during or soon after delivery, and 14 others died within the following 14 months. Of the infants, 51% were still-born; 10% died soon after birth; and 7% died from hydrocephalus or diabetes.

H. Neuman claims that diabetes and pregnancy do not materially affect each other, but "the patients being young individuals, there is the same danger as in all young diabetics." In analyzing coma in uncomplicated diabetes, he comes to the conclusion that fatal coma during pregnancy occurs in a smaller proportion than the general average of coma in diabetes. Neuman further states "that the coincidence of pregnancy and diabetes is extremely rare." Dr. Neuman insists on a strict antitabetic diet.

Diffenback was able to collect 71 cases from literature of pregnancy in diabetes, with sufficient difference of opinion as to the seriousness of the coincidence, as to leave the question unsettled.

CORRESPONDENCE

Dear Dr. Littig:—

I have your letter of the 13th. The proceedings of the Conference of State Secretaries, which was held last October, appeared in the Journal for November 2, 1912 on page 1642. If you do not have the file of the Journal, please let me know and I will send you an extra copy. I hope that your state association can be brought into line on this question as it is really most important for the practical handling of membership matters. I think I can speak with some knowledge and considerable authority on this subject as I had to handle the entire membership correspondence and records of the Association for seven years.

The determination of the fiscal year of the state associations is very largely a matter of either accident or habit. Prior to reorganization, the state associations each had fiscal years which ran from one annual session to another because the great majority of members never paid dues unless they went to the meeting. Dues, in other words, were regarded as a payment for the privileges of attending the annual session. Of course, now that membership is continuous and is dependent on membership in one's county society, the annual assessment of the state societies is the individual pro rata share of the running expenses of the state organization. It has nothing to do with the annual meeting any more. The only sensible and business-like way to handle the matter is to have the membership year coincide with the calendar year. Then, when a man pays his dues for 1913, he knows just when his membership terminates. When he moves from one state to another, he does not have to ask what the conditions are in the new state. The receipts, cards, vouchers and records can all be made out for the calendar year. All membership roles can be revised as soon as possible after the first of January and then everything will be settled for the rest of the year.

I have gone into this matter very thoroughly and from all points of view and there is no good reason why any state society should adhere to the illogical and antiquated method of running its fiscal year from any other date than the 1st of January to the 31st of December. As to the date on which dues should be paid, it ought to be the nearest possible date after the 1st of January. That is, the more promptly dues are collected from the individual members, the more promptly county society secretaries can be required to report to state societies. The committee on uniform regulation of membership wanted to make the interval much shorter, but simply to give the state societies time to get in line, we made this as liberal as possible. As a matter of fact, members can pay their dues just as well the first week in January as they can the last week in March. If they are allowed to do so, they will let it drag until the last minute. The later the members are in paying their dues, the slower the secretaries will be in reporting them and as a result, membership standing and records will be in a condition of confusion all the way from the county society up to the A. M. A.

What I have been working for for eight years past and what I hope some time to see accomplished is a sensible, economical, business-like administration of membership matters in our organization the same as obtains in the Masons, the Odd Fellows, Knights of Pythias and other fraternal organizations. The record books, receipt books, membership cards, stubs, and everything else for each county and state society ought to be printed on uniform blanks and in uniform style here at headquarters. Each secretary ought to be supplied with a complete set of record and receipt books and each one of the 2000 county secretaries and 52 state and

territorial secretaries ought to use the same blanks and the same methods. Of course, we han't been able to say so positively in public, but this talk about different methods being better for different states is all nonsense. The thing that the medical organization needs today from top to bottom is business-like administration.

Pardon me for this long rambling dissertation, but this has been a hobby of mine for many years and while I have nothing to do with it now, I am very much interested in seeing better conditions brought about.

Cordially yours,

Fréderrick R. Green. Ass't. Secy.

A BILL

For An Act to Repeal the Law as it Appears in Section Twenty-Five Hundred Sixty-Four (2564) of the Supplement to the Code, 1907, And to Enact a Substitute Therefor, Relative to the State Board of Health.
Be It Enacted by the General Assembly of the State of Iowa:

Section 1. That the law as it appears in section twenty-five hundred sixty-four (2564) of the supplement to the Code, 1907, be and the same is hereby repealed, and the following enacted in lieu thereof:

That the governor, secretary of state and auditor of state are hereby made a Board of Appointment, two of whom shall constitute a quorum for the purpose of making appointments as hereinafter provided; and the secretary of the Executive Council shall be the secretary thereof. Said Board of Appointment shall appoint a secretary of the State Board of Health, who shall be a legally qualified physician and a graduate of a reputable school of medicine, of not less than ten years' experience, and who shall serve for a term of five years or until his successor is appointed, as are the members of the State Board of Health, and who shall be the executive officer and commissioner of Public Health as hereinafter provided, and five members of the State Board of Health, of which not more than three shall belong to the same political party, nor more than two of the same school of medical practice, which shall be constituted as follows:

That the State Board of Health shall consist of one well qualified civil and sanitary engineer, who shall devote as much of his time to the service of the state as may be needed or required, and when so engaged, shall have all his necessary traveling and incidental expenses paid by the state, and shall have his salary fixed by the Board of Appointment, not to exceed eight dollars (\$8.00) per day nor twenty-five hundred (\$2,500) dollars per annum, and four physicians, each of whom shall be a graduate of a reputable school of medicine, each to serve for a term of five years, unless sooner removed by said board of appointment for good cause, same to apply to the secretary, and until his successor is appointed; provided, that the term of the office of the five members first appointed shall be for one, two, three, four and five years, respectively, their terms to be designated by the Board of Appointment, and to be so arranged that the term of one such member shall expire on the thirtieth day of June of each year. Any vacancies that may occur shall be filled by appointment by the Board of Appointment, and at the expiration of the term of each member, his successor shall be appointed for a full term of five years. No member of the State Board of Health shall be an officer or a member of the faculty of any medical school, and the Board of Appointment shall have the power to remove any member or the secretary of said Board of Health for good cause.

That the Board of Health shall meet semi-annually, in July and January of each year, and at such other times as it may be deemed necessary

by the secretary or on written request of two or more members of the board of health, such meeting to be held at the seat of government; suitable rooms, furniture, office supplies, postage, stationery and printing therefor, to be provided by the executive council in the same manner as for other departments of the state.

That at the meeting held in July, a president shall be elected from the Board of Health for one year, and the Board of Appointment shall in July, 1913, name and appoint a secretary, as herein provided, not a member of the Board of Health, who shall serve for a term of five years or until his successor is appointed, unless sooner removed by the Board of Appointment for good cause, said secretary shall have charge of the office of the State Board of Health.

That when the Board of Health is not in session, the secretary shall be the executive officer thereof, and commissioner of Public Health, and shall have full power and authority to execute and enforce all of the laws, rules and regulations of the Board of Health, pertaining to the health and life of the citizens of the state; to quarantine, to marriages, births and deaths, to sanitary investigations, and to all other matters subject to regulations and control by the Board of Health, the Board of Medical Examiners, and all of the various other departments that are now or may hereafter be provided by law, or by the rules and regulations of such boards of commissions as are authorized to make and adopt rules with reference thereto.

That the compensation of the members of the State Board of Health, except the civil and sanitary engineer which is otherwise provided for in this section, not only as such members, but as members of the State Board of Examiners, and for any and all other services which they may render, either in their individual capacity, or in connection with any other boards or commissions, by virtue of their membership, either upon the Board of Health, Board of Medical, Embalmers, Nurses, or Optometry Examiners, shall be nine hundred dollars (\$900.00) per annum, to be paid as are the salaries of other state officers, which shall be in lieu of all per diem and expenses, except transportation expenses.

That all other laws pertaining to compensation or expenses of the physician members of the State Board of Health and State Board of Medical Examiners as such members, or in connection with any of the other departments, boards or commissions connected with the office of the State Board of Health, and all laws in conflict with any of the provisions of this act are hereby amended to conform to its provisions.

That the terms of the present members of the State Board of Health and the secretary thereof as such, and in connection with all other departments connected with the office of said State Board of Health shall terminate upon the taking effect of this act.

Soc. 2. That all appropriations or provisions hereafter to be made or which have been made the state board of health for public health purposes of whatever nature or character shall be expended under the immediate supervision and direction of the Executive Council of the state, composed of the governor, secretary of state, auditor of state and treasurer of state, all of whom shall be members, ex officio, without compensation, of the State Board of Health, and no bill for contingent or miscellaneous expenses, or expenses of any kind, of said State Board of Health shall be allowed or paid unless it is properly itemized, verified and certified to, and audited by the Executive Council of the state.

Sec. 3. That all laws and parts of laws in conflict with any of the provisions of this act are hereby repealed.

SENATE JOINT RESOLUTION.

Whereas, the Congress of the United States, now assembled, is about to pass a law for the express purpose of examining all of the interstate streams, relative to their pollution and contamination, by having poured into them sewage and other sources of filth, thereby endangering the lives of the people in the states bordering on said interstate streams, and

Whereas, the secretary of the Iowa state board of health has been in communication with the national authorities, relative to an examination of the streams of Iowa, relative to their pollution and contamination, and has received encouragement that the national government is willing to co-operate with the state authorities to making an examination of all the streams of Iowa relative to their pollution, and

Whereas, the United States Congress may pass a law authorizing a co-operation with the authorities of the several states, **Now, Therefore,**

Be It Resolved, by the senate and house of representatives that the governor, secretary of state, auditor of state and treasurer of state, as an executive council of the state of Iowa, be and it is hereby authorized to take such steps as will aid the national authorities in making an examination of the streams of Iowa, relative to their pollution, and which is to be made under the direction of the national health authorities and the geological survey of the United States government, and

Be It Further Resolved, that the executive council here named shall have power to delegate authority to the state board of health and its engineer, to act in conjunction with the national authorities, if the present plans now being considered by the Congress of the United States should become a law.

In compliance with a resolution adopted at the last meeting of the House of Delegates, the retiring President, Dr. V. L. Treynor, has appointed the following members of the Iowa State Medical Society as the Committee on Medical Education.

Dr. L. W. Littig, Chairman,
Dr. F. W. Dean,
Dr. T. U. McManus,
Dr. H. J. Prentiss,
Dr. Max Emmert,

Davenport, Iowa.
Council Bluffs, Iowa.
Waterloo, Iowa.
Iowa City, Iowa.
Atlantic, Iowa.

I remain very sincerely,

J. W. Osborn, Secretary.

PIONEER PRACTICE IN IOWA

D. S. FAIRCHILD, M. D.

Story County.

The preliminary meeting for the organization of the Story County Medical Society was held at Dr. Fairchild's office in Ames, June 19th, 1873. There were present, Drs. Starr and Fairchild, Ames; Dr. B. F. Allen, Story City; and Dr. J. S. Gillett, Iowa Center.

On July 17th, 1873, the Story County Medical Society was formally organized by electing Dr. D. S. Fairchild, president, Dr. J. S. Gillett, vice-president, and Dr. S. J. Starr, secretary, and adopting the code of ethics of the American Medical Association. The membership consisted of Drs. S. J. Starr, Dr. James Bradley, Dr. J. S. Gillett, Dr. B. F. Allen, and Dr. D. S. Fairchild. At that time there were but seven graduate physicians in the county, and three of this number were not engaged in active practice. Those holding diplomas were as follows: —

Dr. Sheldon, Iowa Center, Dr. Gillett, Iowa Center, Dr. Stetzel, Nevada, Dr. Grafton, Cambridge, Dr. Bradley, Ames. Dr. Fairchild, Ames, Dr. Favre, near Ontario. Drs. Sheldon, Favre, and Grafton, were not in active practice.

The meetings of the Story County Medical Society were held quarterly. At the second annual meeting (1874). Dr. G. A. Meredith of Ontario was admitted to membership. The old officers were re-elected.

For several years after the organization of the Society the number of graduates in medicine was so small that all engaged in active practice who did not profess to belong to some special sect of medicine, were admitted to membership.

At the time Story County Medical Society was organized, the only towns having physicians were Ames, Nevada, Story City, Iowa Center, Colo, and Cambridge. Most of the physicians were practicing on one course of medical lectures. Only a few roads were fenced and were so bad that for a part of the year on horseback was the only practical way of visiting patients in the country, and it was sometimes a good day's work to visit two patients.

Story County Medical Society for the first ten years of its existence met regularly every three months, but with a rather fluctuating membership. About 1884 or 1885 there were enough graduated physicians in the county to reorganize on the basis of a full medical course with a degree as a requisite for membership. The one course practitioners who remained had in the meantime attended a second course and obtained a degree.

Pioneer Physicians.

Dr. Alexander Favre was born in Château Doex, Canton de Vane en Suisse January 29th, 1799. He studied Medicine and Sur-

gery in Paris and Lyons, France; received his diploma of Physician, Surgeon, and Accoucheur of the first class in Lausanne, February 18th, 1830. Practiced medicine in Orbe, Beaume and St. Croix, Canton de Vaud, Switzerland until May 1846 when he emigrated to America. Lived and practiced in Washington County, Wisconsin, for five years, then moved to Story County, Iowa, January 1852 where he died March 1876. During Dr. Favre's residence in Story County, he was not engaged in active practice but for many years was summoned often as consultant in grave cases and to attend almost all severe surgical cases.

Dr. M. D. Sheldon of Iowa Center and Dr. Grafton of Cambridge came to Story County about the same time that Dr. Favre did; both were regular graduates and successful practitioners but retired from practice about 1870.

The number of practicing physicians (1876) was 18, of which 11 had diplomas and 7 had no diplomas.

Classification:—Regulars,—Graduates 10;—Non-Graduates 4. Total 14. Electics,—Graduates 1;—Non-Graduates 3. Total 4. Grand Total 18.

Surgical Operations.

1869—Amputation of thigh—railroad accident. Death-Collapse.

Dr. Allerman, Boone.

1869—Amputation of leg—threshing machine accident. Recovery.

Dr. Favre.

1873—Removal of fibrous tumor from axilla. Recovery. Dr. Fairchild.

1873—Recto-vaginal fistula. Successful. Dr. Fairchild.

1874—Recto-vaginal fistula. Successful. Dr. Fairchild.

1874—Amputation of leg. Caries of bones of foot. Recovery. Dr. Fairchild.

1874—Removal of fatty tumor from back (large). Recovery. Dr. Fairchild.

1874—Amputation of right breast (cancer). Recovery. Dr. Fairchild.

1874—Resection of lower part of tibia. Recovery. Drs. Fairchild & Gillett.

Scott County.

The Scott County Medical Society was organized at a meeting of nine physicians who met for that purpose at the office of Drs. Witherwax and Carter in the city of Davenport, Oct. 18th, 1856.

October 28th, thirteen physicians met at the same place, adopted a constitution and by-laws, the Code of Ethics of the American Medical Association and elected the following officers:

President, Dr. Egbert S. Barnes, Vice President, Dr. Lyman Carpenter, Secretary, Dr. J. J. Tomson, Treasurer, Dr. James Thistle.

At the first quarterly meeting Drs. Barnes and Sanders were elected delegates to the meeting of the American Medical Association.

At the second meeting, April 28th, 1857, the members of the Rock Island Medical Society were made honorary members.

January 26th, 1858, the constitution and by-laws were revised. The constitution and by-laws were again revised in 1865, the committee on revision being Drs. W. F. Peck, J. W. H. Baker, and J. W. Witherwax, since which time forty-three members have been enrolled. (1876). There are now (Jan. 1876) the names of twenty-six active members on the roll. The officers are as follows:—President, Dr. W. D. Middleton, Vice-President, Dr. W. W. Grant, Secretary, Dr. C. H. Preston, Treasurer, Dr. L. French.

A very excellent report on medical plants was made by Dr. C. H. Preston, but to economize space the reader is referred to the report of Prof. Bessey.

The population of Scott County (1876) is 39,736. The number of practicing physicians 64. Of these 58 are males and 6 females. 39 are engaged in regular practice and are graduates of regular medical schools. Of the 39, 37 are males and 2 are females. Homeopaths 10.—Males 9. Females 1. About one half of the ten are graduates of Homeopathic Medical Colleges. Electics 4. Of irregular practitioners, traveling and advertising quacks, there are 11. 8 are males and 3 females. Originally two or three of these were graduates of regular medical schools but now practice quackery in one or more of its many forms. The majority of these however, are entirely without medical education.

Iowa and Illinois Central District Medical Association.

The association was organized in Davenport, Nov. 7th, 1866 by a number of physicians living within a radius of fifty miles from this point. It meets on the second Thursday of the months of January, April, July and October alternately in Davenport and Rock Island. The annual meetings are held in Davenport in July; length of sessions, one day.

The society is in a flourishing condition and has fifty members in good standing. (1876) The present officers are: (1876)

President, Dr. J. B. Davis, Moline, Ill. Vice President, Dr. Jas. Cozad, Andalusia, Ill. Secretary, Dr. F. H. Hazen, Davenport, Iowa, Treasurer, Dr. A. W. Cantwell, Davenport, Iowa.

DEATHS.

Dr. T. H. Heffernan, President Dubuque County Medical Society, Dubuque, Iowa, May 7, 1913.

The sad news comes to us that Dr. A. L. Wright died of acute intestinal obstruction while the party was in Paris, July 19. Dr. Wright was one of the best known and valuable members of our Society. He had served as president some years ago, and of late years had been active as a member of the Medico-Legal Committee. He had also served as a member of the Board of Trustees, and as Fourth Vice-President of the American Medical Association. His great influence was always cast on the side of uprightness and honesty—a deadly foe to the commercialism so widely spread in the profession. A suitable biography will appear in the September Journal.

SOCIETY NOTES.

The Polk County Society on June 24, 1913, had the following program:

Hemiplegia and the Hemiplegic State Dr. R. C. Doolittle
The Surgical Treatment of Pyosalpinx Dr. H. D. Gray

Each essayist presented his subject in a very able manner. Dr. Doolittle handling his subject in a very thorough and exhaustive manner, while Dr. Gray urged more caution and conservatism in the treatment of women with pus tubes, contending that many women had been deprived of their reproductive organs which might have been avoided if a vaginal drainage operation had first been tried.

Dr. Allen Moorman, Secretary of the Dallas-Guthrie County Society sends the following announcement of their July meeting:

Dear Doctor:

The Dallas-Guthrie County Society will meet at Adel on Thursday, July 17. Say it has been rather hot the last month, hasn't it? In fact too hot for a busy doctor to prepare a paper, even on an easy subject. And don't you think it is just a little bit warm to sit and listen to a paper, even though it be a real good one? I am glad you think so, as that is the way I feel about it myself, so we are just going to have a general discussion of the bowel troubles that a busy doctor like yourself meets so frequently this time of the year.

By the way, were you present at our last meeting? There were so many out that I had really forgotten whether you were there or not. If you were, I am sure you will be at this one.

If you haven't been present for some time, let me remind you that we are still offering special inducements to get all the members of the profession out. Of course we can't pay your carfare both ways, but we will give you a good dinner as the landlord can put up, and it is also the custom of the society to allow all who are present to take part in the discussion whether they have paid their dues or not.

Try it once and see how it seems to meet with a real, live county medical society.

The mid-summer meeting of the Pottawottamie County Society was held in Adolph Wunder's grove, one mile north east of Minden on Tuesday, August 5, 1913. Program:

The Treatment of Summer Diarrhea in InfantsDr. Sidney Smith.
Visitation of Patients by Relatives and Friends while in

HospitalDr. F. T. Seybert.
Treatment of FracturesDr. Barney Atchley.
Shortening of Flexor Tendons after Colles Fractures and

Report of a CaseDr. C. A. Hill
Do Not Be in a HurryDr. G. A. Spaulding
DiagnosisDr. Donald Macrae
Talk on MeningitisDr. V. L. Treynor

Appanoose County Society program July 30, 1913.

Therapeutic Indications of Antitoxines, Serums and

VaccinesDr. B. F. Sturdivant
OsteomyelitisDr. E. T. Printz
ArthritisDr. J. A. Replogle

The annual June meeting of the Dubuque County Society was held in Dubuque, June 24, 1913. The meeting was a very successful one with a large attendance. A buffet luncheon was served with after dinner speakers. Dr. H. L. Walker, the vice-president, having become president through the death of the president, Dr. T. H. Heffernan, which occurred May 7, 1913. Dr. A. L. McNiell was elected vice president.

The scientific program was:

Surgical treatment of Certain types of Bronchial

AsthmaDr. E. Wyllys Andrews, Chicago
AnaphylaxisDr. Geo. Minges, Dubuque
The Modern Treatment, in a general way, of Mental
DiseasesDr. J. M. Walker Dubuque

The program of the Woodbury County Society on April 24, was;
Observations in Cases of High Blood Pressure

Dr. F. B. Johnson, Sioux City.

The Construction of Leather Casts' .

Dr. Frederick C. Schadt, Sioux City.

On April 29, the Plymouth County Society held a very successful meeting. The program was

PneumoniaDr. J. H. Robbins, Hinton.
Health—its deeper meaning ,Dr. A. H. Jastram, Remson.
and an informal talk on matters of professional interests.
.....Dr. G. C. Moorehead, Ida Grove.
Councilor for the 11th Cong. Dist.

The secretary of the county society is the king pin of the society life. If he works, the society will progress; if he lags, the society will stagnate.

Entirely too few physicians realize the value of the local society. Through organization has come all the progress and prosperity of the profession.

The benefits have not only been to those who were active in the society but all practitioners have received material help.

The moral is that every physician practicing in Iowa should be in active membership in the county and state society and it is up to the secretary to urge everyone to come in and help and be helped.

The House of Delegates of the state society is getting to be a more and more important part of our work. Each year the volume and character of business to be transacted increases. The most valuable members of the House are those men who have been sent there by their county societies term after term; and the most influential county societies are those which recognize this and send the same men repeatedly.

The delegate should be kept in office as long as he gives whole hearted service, and as long as he can be prevailed upon to serve.

Drs. D. S. Fairchild of Clinton, A. L. Wright of Carroll and Granville N. Ryan of Des Moines, sailed from New York July 3 as members of the Physician's Travel Study Club. Several weeks were spent in visiting the clinics and resorts of Europe and attendance on the International Medical Congress in London early in August.

Fishing.

The following letter, a circular one evidently, was received this week, (August 1) from the secretary of a coal company in Chicago. This is supposed to be the season for fishing and we would be pleased to know how many take this bait. The coal business is slack now and this enterprise may help some.

July 31, 1913.

Dear Doctor:—

I have in my possession a physician's prescription for Rheumatism, which has eliminated the pain every time I have used it. I am subject to acute attacks about once or twice a year, and as above stated, this remedy surely does the work. I fully believe that, should you prescribe it for any of your patients, good results would be obtained. My own family physician prescribes this remedy with success, and thereby endorses it.

If you will send me One Dollar in enclosed envelope, I will take pleasure in mailing you a copy of this prescription, which you should have without fail.

Very truly yours,
C. F. Lemmon.

We note by newspaper reports that the company in charge for Iowa of the Friedmann cold blooded turtle cure-all will remove the plant from Colfax. Protests from the Board of Health seem to have been effective. Fortunately the failure of this German fiasco has been about as widely heralded as was the triumphant oncoming of its originator, and the path of the institutes will not be as rosy as the company might wish.

At the Annual Meeting of the American Association for Cancer Research, May 5, 1913, the following resolution (the report of the committee on Statistics and Public Education) was unanimously adopted:

It is the sentiment of this Association that:

1 The present instruction of medical students in the symptoms and early diagnosis of cancer is seriously deficient.

2 The medical curriculum should include special lectures in the clinical departments dealing specifically with this subject.

3 The universities should provide competent lecturers in this subject to address the local medical societies.

4 The Associate Members of the Association should be urged to take up the question of the proper methods of approaching the public on the subject of cancer.

5 The activities of this Association should at present be chiefly confined to the education of the medical profession.

6 This resolution shall be sent to the Deans of the medical schools and the Secretaries of the State medical societies in the United States and published in the medical press.

Appanoose County Society on June 25, 1913 had the following program:

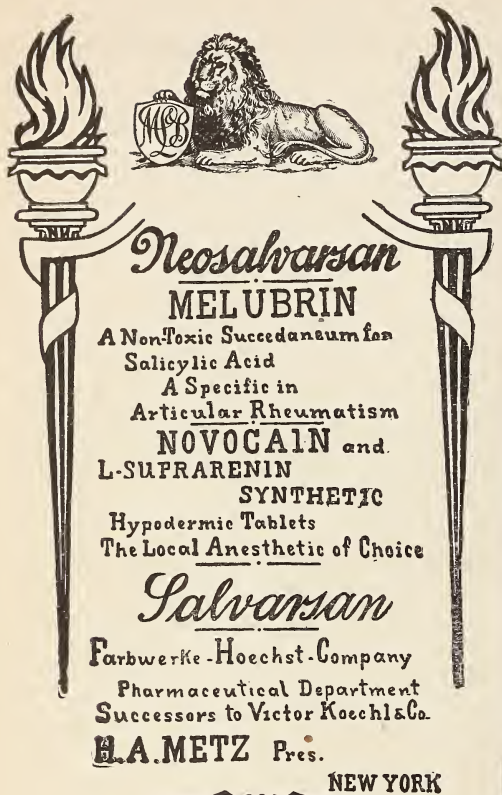
| | |
|--|-------------------|
| Acute Intestinal Obstruction | Dr. C. S. James |
| Ectopic Gestation | Dr. C. P. Bowen |
| Ulcer of the Stomach and its Treatment | Dr. E. E. Bamford |

Henry County Society on June 25, 1913 had a basket picnic in the grove at Mt. Pleasant at which the following program was given.

| | |
|---|-----------------------------------|
| Importance of Clinical Histories | Dr. C. A. Boice, Washington |
| Reading | Mrs. W. Frank Brown, Keokuk. |
| Talk on Blood | Dr. E. J. Wehman, Burlington, Ia. |
| Reading | Mrs. W. Frank Brown, Keokuk. |
| The Causes and Non-Operative Treatment of Retention of Urine in the Male | Dr. W. Frank Brown, Keokuk |
| Some Special Headaches | Dr. C. P. Frantz, Burlington |
| Three Neglected Important Subjects | Dr. D. C. Brockman, Ottumwa. |

Jefferson County Society on June 27, 1913, met in the hospital at Fairfield. Dr. C. P. Howard, held a clinic at which several interesting cases were shown. This departure from the ordinary set program was greatly appreciated by all present.

Besides the physicians from Fairfield who attended the following from out side towns were present. Dr. McClure, Iowa City, Drs. Schaffer of Rome, Sherlock of Lockridge, Mehler of New London, James, Tilmont, and Harris of Centerville, Newland of Drakeville, Cresap of Bonaparte, Russel of Keosauqua, Howell of Hillsboro, Stewart of Pleasant Plain, Terry of Brighton, King of Batavia, McElderry of Agency, Bannister, Edgerly and Spilman of Ottumwa, Woods and Strickling of Birmingham and Doods of Richland.



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References: El Paso County and Colorado State Medical Societies.

BUSINESS MANAGER, Maurice G. Witkind,
 PHYSICIAN-IN-CHIEF, Edward Moore, M. D.

Please mention this Journal

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ORATION ON SURGERY IOWA STATE MEDICAL SOCIETY

J. N. WARREN, M. D., Sioux City.

From a very ancient date surgery has had a prominent place in the affairs of mankind. We are apt to attribute the present exalted state of medicine and surgery to modern times. History proves that the ancient investigators built the first step in the long flight of stairs leading to the present dignified platform. The Hindu priest and physician, a very selected few, in the twelfth to the ninth century B. C., wrote manuscripts on medicine and surgery, the latter having the more prominent position. They had some knowledge of anatomy from dissection of the human body. Charka, an eminent Hindu physician and surgeon, who took the prominent position as physician to the king, lived at a period about five hundred years before the Christian Era. He wrote a treatise upon surgery. Some of the precepts taught by him are observed at the present time. He taught the difference in severity of an abscess which pointed above the surface and one which did not. Incised and packed the cavity to prevent the healing of the incision and unconsciously established drainage. It is very probable that the Greek philosophers and physicians received some of their knowledge from the ancient Hindu teachers by association with the wise men of Egypt and Arabia.

The history of surgery is a very enticing field, but time will not permit but a brief synopsis of some of the noted persons from the ancient to the present, in order to lay a foundation for my opinion as to what constitutes a surgeon. The eras of surgery, since ancient surgery, can be counted upon the fingers of one hand. If tempted to criticise or ridicule these characters, we should remember to measure them in the light of the sum total of knowledge in their day,

not ours. From the ancient we come to the era of the barber surgeon. Next the Hunterian era. From England we shift to the great schools and teachers of France. Then the present era the German-American. However flattering this may be to our vanity I believe it should be called the Listerian era.

Hippocrates, the father of medicine, was a surgeon. He lived 470 to 360 B. C. He came from a family of physicians and surgeons.

However, Egyptian surgeons became famous long before the time of Hippocrates. This great man received a liberal education before he studied medicine. He traveled to all the noted centers of education continuing his studies for a number of years. He then returned to his native country as an instructor and operator. His initiative stimulated medical thought for many centuries. Then came Galen. He lived about 500 years after the Christian era. After a careful education he became a student of medicine. He was a finished product of the Alexandrian school after eight years of studentship. Alexandria was the mecca of medicine for a thousand years.

Galen's teachings controlled the medical world for sixteen hundred years. He is to be honored for his development of anatomy by dissection. He demonstrated that the arteries carried blood not air. That there was a communication between the arteries and veins and used the word anastomosis in the same sense that we now use it. In his animal experimentation he double ligated vessels and divided the vessel between the ligatures. He does not seem to have carried the practice to the terminal ligation of vessels. Leaving Alexandria he returned to his native province where he taught and practiced for four years. The restricted field did not satisfy his ambition so he located in Rome. He states that in Rome he found the profession debauched. Doctors were a set of vampires, dishonored, ignorant poisoners, procurers, extortionists praying upon the ignorance of people.

Vesalius an accomplished scholar from 1514 to 1563 became the greatest anatomist the world has ever known.

Paré, from 1510 to 1590, rose from the barber surgeon to be the greatest surgeon of his or ancient times. He knew that Galen ligated arteries in continuity, but to Paré, belongs the honor of terminal ligation of arteries.

The next great surgeon was the accomplished scholar Von Haller. Then came the philosopher and surgeon John Hunter. He possessed a very limited education. He began the study of medicine under his brother, a noted physician and an accomplished scholar. By earnest, untiring, persistent study he not only became a great surgeon but a philosopher. His prolific writings commanded the respect of the most learned bodies. The emancipation from traditional confines was accomplished by a few strong men. Hunter was a prominent factor, and almost reached the goal, evolution. These

great men were untiring workers. Most of them had received a liberal education. They all served under the masters preceding them as a part of their preparation for the work.

Among the pathfinders of American Surgery, Jones of N. Y. was a student with Hunter. William Shippen, Phillip S. Physick, the father of American surgery, were pupils under Hunter. John Warren was educated in this country. The names of William Post, Valentine Mott, Ephriam McDowell and J. Collins Warren, the noted surgeons in the early history of America, down to Samuel W. Gross the greatest of American surgeons, are familiar to all.

The one most prominent fact gathered from the history of surgery is the laying of a proper foundation. Years of diligent study and investigation, traveling from one great center of learning to another receiving instructions from the great masters. Serving an apprenticeship, if you please, finally becoming the beacon lights that give instruction to subsequent students. History shows that master minds, the epoch makers, are not born in one generation or century in any given field of study. There has been a shifting of the star. Statesmen, philosophers, scientists, soldiers, painters in turn become the heroes of the hour. A huge cycle of education. Earnest students have as an end result discovered great and permanent truths which become the governing forces in the different branches of science and art. We are a great family of imitators. A few indeed are the master minds, the epoch makers, the creators.

Lister was a man of diligent, persistent, scientific earnest endeavor. He received a classical education and for five years a student of medicine. For some years a dresser for Erickson, his house surgeon being Sir Henry Thompson. Sharpey and Thompson advised him to go to Edinburgh for a six weeks course. He went and remained in Scotland 28 years.

From Pasteur, a contemporary investigator, Lister received his final inspiration. Pasteur in his study of the causes of fermentation and putrification published his discoveries. In an interview with Napoleon the Third he states:—"I assured the Emperor that all my ambition was to arrive at a knowledge of putrid and contagious diseases." Lister being pained by the great suffering and numerous deaths from these causes and seeking for a remedy developed and demonstrated antiseptis, which in turn lead to asepsis.

Who can measure the lowered mortality, physical comfort and relief from suffering brought about by this discovery? Keen places Jenner, Warren and Lister as the three great demonstrators of the last century. Jenner for vaccination to prevent small pox: Warren the first surgeon to exhibit and demonstrate the use of anesthetics: Lister to prove the action and value of antiseptis. The abrogation of pain incident to surgical operations was such a boon to humanity that the world arose in profound admiration and gratitude. When

we contemplate the immense saving of life, the unbounded relief from suffering brought about by anesthesia and antiseptics later followed by asepsis, can we resist the impulse to build a monument of everlasting endurance to the memory of these benefactors of humanity? The laboratory has differentiated the micro-organisms causing infection.

With the study of embryology new truths were added. The neoplasms of unknown origin were made plain. Histology, morbid anatomy, pathology the main foundation of surgical knowledge, following anatomy and physiology, must be mastered in detail if one can hope to be recognized as a junior in the surgical family.

With proper technical training we advance to the degree of surgeon. The magical advancement of surgery in the near past, has polished the shield to a dazzling brightness. Pass the shield. Look at the new painting. The temple of surgical fame. In the niches and down the halls we see the statues of the pathfinders, the epoch makers. In the grounds surrounding lined with walks in fresh verdures, coursed by silvery brooks we admire the lasting monuments to Anatomy, Physiology, Pathology, Chemistry and kindred sciences. In the back ground we see creeping upon the scene the dragon of Commercialism. Already a mist spread over the beautiful canvass. The very weapons that have given us such glorious victory are used for our defacement. We have through this country a vast army of operators and few surgeons.

They have some knowledge of anatomy and physiology and the mechanics of operating, but these do not make surgeons. If we press them to a knowledge of minute anatomy, histology, embryology, morbid anatomy, pathology, etc., they draw blank numbers. You may ask, how do these men gain a following. By commercialism. In the larger commercial centers they are doing a large amount of operating. They seem to have adopted a motto "Crede quod habes et habes." Impossible! They have not passed through the fiery furnace of studentship. In their egotistical greatness they strut by with a defiant arrogance born only to ignorance. The true scientific student shrinks away with a shuddering sense of humiliation. The bright shield is partially eclipsed, the beautiful painting has become an indelable daub, the profession is debauched and humanity groans.

THE IMPORTANCE OF LABORATORY EXAMINATIONS IN EARLY INFANCY AND CHILDHOOD*

GRANVILLE N. RYAN, M. D., Des Moines.

The luke-warm attitude of our profession towards the importance of laboratory analysis combined with the physical findings in the study of abnormalities and diseases of the infant and child, is gradually disappearing, and the horizon of science is being filled with conscientious, close observers, which is most gratifying. But even now, if we cast about among the offices of the profession, we are astonished to know that a large percentage is content with an incomplete laboratory, even for the careful analysis of urine, and do not pretend to go into the analysis of sputum, blood, stools, etc. The laity has already learned that the best asset a doctor can have is a well equipped laboratory.

To be able to minimize the alarming high mortality in the treatment of diseases of children, we must use every facility the thoroughly equipped laboratory offers.

The normal laboratory findings in the infant differ from the adult. To appreciate an abnormal condition then, a comparison of the normal in the infant and adult will be made as the occasion demands. In comparing the excretions of the urinary tract, we find that the urine secreted immediately after birth, is of very low specific gravity. The quantity is much greater proportionately than the adult, being largely accounted for by an increased amount of liquid ingested, and a more active metabolism. The urea as well as the uric and oxalic acids are also increased, while the osseous system of the body calls for more strength, and we see a marked decrease in phosphates, sulphates and chlorides. We also notice albumin, epithelial cells, hyaline and granular casts, and uric and oxalic acid crystals are all demonstrable in the urine for the first few days after birth.

But nature asserts her rights, and the battle field is cleared in the first few weeks. If this does not occur, then a careful search for pathology must be instituted. The urine which is at first neutral and clear, becomes markedly alkaline and turbid upon the appearance of hydrochloric acid in the stomach. Although a true phosphaturia may exist, we can't say that it has a pathological significance. If there is a hyperchlorhydria for any length of time, then we should anticipate an acidosis which frequently is preceded, or is accompanied by tonsillitis, gastritis, or gastro-enteritis.

Then how very important early recognition and prophylaxis are to prevent the sequelae that follow such conditions at this age. The

*Read before the Iowa State Medical Society, Des Moines, 1913.

true significance of acidosis has only lately been appreciated, and its presence has been far more frequent than we had formerly supposed.

The syndrome characterized by a hyperacidity of the entire body, which shows a deficiency in alkalies, deserves the most careful consideration, for if not corrected the end results are fatal. This condition may exist without marked gastro-intestinal disturbance, and yet with an excess of fat diet, a decided malnutrition, and consequently a faulty metabolism be present, with a deficient excretion of bile and pancreatic fluid, the fats are not properly absorbed, hence fatty acids with the soaps of calcium and magnesium are markedly increased in the stool, with a proportionate decrease of these in the urine. We see a deficiency of the alkalies and a compensatory elimination of ammonia. Hence the appearance of acetone and diacetic acid in the urine, with a decided acidosis.

Modes of infection of the genito-urinary tract are thorough the urethra, through the renal tissue, and from the intestinal tract direct into the bladder, by the *bacillus coli communis*. When we find pus in the urine, the external genital organs being healthy, with neither balanitis nor vulvo-vaginitis, it denotes either cystitis or purulent pyelitis.

In former years it was thought that the reaction of recently passed urine was alkaline in cystitis, especially in chronic cases, while acid in pyelitis, unless it was complicated by cystitis. Rowsing demonstrated that it depended upon the character and properties of the microbe. (Some microbes decompose the urea, making the urine alkaline, while others do not affect it, the *staphylococcus* and *streptococcus* belonging to the former, while the *bacilli coli communis*, the *bacilli tubercule*, Neisser's gonococcus, and *bacilli typhosus* belong to the latter.) This is followed by a marked pyelitis or cystitis or both, the syndrome being ushered in by pyrexia, and occasionally chills, anorexia, vomiting, headache, general lassitude, diarrhea, and in fact quite a complete picture for some general systemic infection, like typhoid or malaria. But our blood findings are negative, and we have the mystery cleared up by making a careful urinal examination, and find a marked bacteremia, and consequently a severe pyelitis, cystitis, or both. This is a condition that we find in a large percent of cases, and one that has added more to the high mortality in infants and children than any other.

It is well to remember that tuberculosis may develop primarily in the bladder or pelvis of the kidney. The differentiation between these is made by a presence or absence of bladder symptoms. To be able to find tubercle bacilli in the urine, is frequently an endless job, but with careful technic, we are usually rewarded, even if it does require a day or more. Of course it is possible to inject our friend, the guinea pig, while this requires time, it is well worth our

efforts, and is a most satisfactory and reliable confirmatory test. Tuberculosis of the bladder is usually confined to that organ, and may last for a long time in a mild form. We see that military tuberculosis of the kidneys does not produce any pronounced symptoms, and for a diagnosis we must have the laboratory findings.

To determine the source of pus in the urine, is not always an easy matter. The microscopic findings show pus and epithelial cells, both in cystitis and pyelitis. Their habits can be told by their shape. The presence of a disproportionately large amount of albumin, casts and pus is in favor of pyelitis. Grulee of Chicago says, "that if you find as many as seven pus cells to the field, without centrifuging the urine, you can be reasonably certain that it is pyelitis. A chronic cystitis most often follows the passing of gravel, or is due to retained sand, or it might be due to a paralysis and consequently a retention of the urine. Pyelitis might also be due to the presence of gravel or renal sand, with a history of periodical albuminuria or hematuria, it is most likely due to sand. Albuminuria in childhood most often depends upon an acute parenchymatous nephritis. Laboratory evidence, such as white and red corpuscles, the different casts, renal epithelium. We may see the percent of albumin runs from 1 1-2 to 2 1-2 percent. We find that an uncomplicated nephritis runs its course in from 3 to 6 weeks, but if complicated with cardiac weakness, and consequently edema, the end results are fatal.

Then is it not time to make a plea for the careful, thorough laboratory analysis of urine to check up these conditions that cannot be diagnosed any other way? In considering the cardiac conditions of the infant and child, Pisek of New York advocates the polygraph. He says "by its use we can show definitely whether the cardiac rhythm is normal; if abnormal whether the arrhythmia is due to respiratory or other influences; whether ventricular contraction follows auricular contraction as it should; whether the excitability of the heart is normal. Also with this instrument it is possible to study the functions of the cardiac muscles." Without a knowledge of these conditions, how infrequently we administer digitalis when it is really contraindicated. As a result of such indiscriminate use, we find our little patient with an irregular pulse and frequently with an increased respiration, and occasionally a hypostasis of the lungs, all due to digitalis heart block.

In considering the blood, our careful attention is directed towards the number, size and form of the corpuscles, both red and white, as well as the percentage of hemaglobin. The blood changes in anemia are of a very important value, not alone for differential diagnosis, but for the estimation of results of our therapeutic endeavors, as well as for forming a basis for an intelligent prognosis. We find that the erythrocytes in an infant's blood are nearly the same as in the adult, except in the newly born. They may run up to

six or seven million per cubic millimeter, but in a few weeks the count becomes normal.

In mild cases of anemia, the count may run three or four million. When the condition becomes grave, the count will show one million to three million, and in the fatal form, from five hundred to seven hundred thousand. The white blood corpuscles run higher proportionately than the red, from five to ten thousand. In the young infant, we find twenty thousand for the first few days of life. This has been called a "physiological leucocytosis." In pathological conditions of the blood, we find usually an increased number of leucocytes, and yet this finding alone is not conclusive, for the count may remain the same even in the face of the most grave conditions. We can frequently attribute a simple anemia to a disturbed nutrition and faulty metabolism, but this may readily become grave in children under two years of age.

We find the hemoglobin in the young infant very high. It may reach even 100 percent according to Fleischl's observations, but by the time the fifth year is reached, it will register 60 percent, and then from 70 to 80 in the twelfth year. Where we have a mild anemia, the hemoglobin will run from 45 to 55 percent. If it is assuming a grave form of anemia, we at once consider the size and shape as well as the number of red blood corpuscles, and a leukemia by the number of white corpuscles.

An analysis of the cerebro-spinal fluid is considered now as of the greatest importance. Lewis Fisher of New York says, "the frequency of convulsions in children prompts me to call attention to the necessity of lumbar puncture as an aid to an early diagnosis of this very important symptom. Intestinal intoxication is a frequent cause of cerebral congestion, resulting in convulsions. But more commonly they are the initial symptoms of an infectious disease, a forerunner of pneumonia, scarlet fever, measles, diphtheria, or some severe tonsillar infection; or we might have a cerebro-spinal meningitis or tubercular meningitis." (*Archives of Pediatrics*, 3-1913.)

Draper in a monograph published by the Rockefeller Institute says "There are two ways in which a careful study of the cerebro-spinal fluid in acute poliomyelitis may help to throw light on the disease. On the one hand the changes observed may facilitate early diagnosis, and thus enhance the value of any method of treatment which may be discovered in the future, and on the other hand, the variations in the character of the fluid, as observed during the progress of the disease in each case, may give some information as to the usual course of the process, and thus be an aid in determining how far any given remedy is effective, or to what extent the natural course of the disease may be influenced." The gold chloride test of the spinal fluid especially in paresis and locomotor ataxia, is a most satisfactory confirmatory test, and is considered even more delicate

than the Wassermann. It should however, be used in conjunction with the Wassermann test.

The complement fixation test for gonorrhea has become very necessary, especially in making a differential diagnosis in salpingitis, and gonorrheal infection in the male, where it is impossible to get a specimen of pus, and careful inquiry into the history may not reveal anything tangible, and the ear marks which would make a diagnosis possible are frequently absent. The subcutaneous test as advocated by Irus of Chicago should be considered.

Status lymphaticus should have the most careful study in the x-ray laboratory, both for diagnosing and treatment purposes. The radiograph shows a shadow continuing from the shadow of the heart extending upward upon both sides of the sternum, but more prominent on the left side of the upper border of the sternum, and Dr. Selby of the Mayo Clinic says "that the enlarged thymus gland can be differentiated from the enlarged bronchial nodes by the former not showing a lobulated appearance in the shadow." The flourescopic examination is very valuable, but does not afford a permanent record capable of careful study. The x-ray laboratory is imperative to substantiate the diagnosis of pregnancy, also to differentiate between pulmonary tuberculosis, empyema, and unresolved pneumonia. Also in tuberculosis of the long bones, spine, and of the joints; also in fractures during the process of delivery. The condition of rickets has been well worked out in the laboratory.

In exudative diathesis, we frequently find a number of children in the same family affected. As this is a condition which is due to malnutrition, especially the digestion and assimilation of fats, upon a positive examination of the stools with a fat free diet instituted, the condition at once shows improvement.

As we see such brilliant results obtained in the well directed laboratory, both clinical and research, should this not be a stimulus for us to reinforce our armamentarium, even though the work be limited, to lend our aid in the great battle that is being so well waged against the alarming mortality of our infants and young children.

Discussion.

Dr. Walter E. Scott, Adel: I rise to compliment the doctor on his most excellent and timely paper, and one that we all appreciated.

I would like to ask the doctor, as long as we are unable to tell when the child desires to urinate, how he secures the 24 hours quantity of urine, also what is the normal quantity of 24 hours amount for an infant? Also, how many days a new born infant may go without urinating and survive?

It is a fact, that many nurses and doctors do not know how to secure the 24 hours amount of urine from an adult. I do not in an infant. It seems to me, if there is anything that is lacking in the training of nurses, it is how to secure a 24 hours amount of urine, which I think should be done as follows:—

Beginning at a certain hour, empty the bladder and throw the urine away. Save all that is passed to the same hour the following day, emptying the bladder at that time and add the amount to make the twenty-four hours amount. The serious error of many nurses is in saving the amount

in bladder at time of beginning, which, of course, might be six, eight, ten or more hours secretion.

A Member: I am sure the doctor is correct in his criticism of the average doctor as to the carelessness of urinary examinations. For a number of years, I have discovered a good many cases of incontinency of urine which were due to the colon bacilli. A little hexamethylentetramin will clear that up.

A Member: I am heartily in accord with everything Dr. Ryan has said. I would like to lay special emphasis on the examination of urine as a general proposition, in children and adults. I think the average physician does not do that as much as he ought to. I believe the physician who does not equip his office in a small way with a laboratory for microscopic and a thorough examination of the urine, ought to be arrested.

There is another point I would like to emphasize in connection with this paper, and that is the fact that we are not performing the spinal punctures often enough, as relates to the frequent occurrences of cases of meningitis. I know of nine cases near my town where an absolute diagnosis of cerebrospinal meningitis would have been made, if the puncture had been resorted to. I know that I have been guilty of signing death certificates, calling it uremia, or something of that sort, when the case was cerebrospinal meningitis, when the only way to diagnose the case was with a spinal puncture.

Dr. F. Rosenblatt, Des Moines: Dr. Ryan makes the point that we should make more careful laboratory examinations. I had a case I recall quite vividly, which taught me the truth of that statement. It was not exactly a case of infancy, yet of childhood. A girl about 12 years of age was sent to me for too frequent urination. I made a test and found albumen present. I treated her a couple of weeks and she got no better, until finally she went to some one else, who happened to be a good friend of mine. Some time ago I saw him, and he said: "I have got a good one on you. I made a laboratory test and found nothing but some epithelial cells. I introduced a sound into the bladder and found a stone with a hair pin cystitis." He was a very busy man, far busier than I was; yet he took the time for a laboratory analysis.

When I put the statements of these two men together, Dr. Ryan and Dr. Brooks, of Audubon, I think the point is mighty well taken.

Dr. G. N. Ryan, Des Moines; (Closing): I am certainly very grateful to the gentlemen for this kind discussion and good words.

Answering Dr. Scott's question, I would say, my attention has never been called to that special point. I know we have cases where urine has only been passed, possibly once in 24 hours. I surely get pretty busy then and institute some method to aid in clearing up this suppression. My attention has been called, if I remember correctly, to a few cases, where it was said, the urine had not been passed for three days, without apparently any serious complications.

In collecting the urine, I have advocated the method of using the test tube, with a little adhesive strap. When I ask for a 24 hours specimen, I use a small flask or test tube. This is to be applied with a small strap of adhesive plaster, and when filled it is emptied, the process is continued until we get the full 24 hours specimen.

My idea in writing this paper, was to emphasize the importance of laboratory findings. I did not feel that I was capable of telling you anything new about this work, but I wanted to emphasize the importance of it. My experience and observation has been that in a great many instances, urinary examinations, examinations of the blood, stool, etc., have been very much disregarded. I simply wanted to lay a little emphasis on this most important subject, with the hope that it might bear some fruit.

GONORRHEA*

FRED. J. JARVIS, M. D., Oskaloosa.

Gonorrhea is a contagious, inflammatory disease of the mucous membrane of the genito-urinary tract. It is caused by the gonococcus of Neisser. It has an incubation period of from three to seven days. It varies greatly as to the severity of its attack. We speak of it as being acute or subacute.

All the symptoms are greatly exaggerated in the acute type, the discharge is profuse and consists of a thick green-yellow pus flowing from the meatus day and night. Urination is painful, with severe burning along the floor of the pendulous portion of the urethra; the prepuce is greatly swollen and erections with chordee are frequent.

In the subacute type all the symptoms are lessened, though many times the treatment is more difficult and requires longer time and more painstaking effort to effect a complete cure than does the acute type. Posterior urethritis and prostatitis are almost without exception present in the subacute type, due probably to the fact that because of its insidious onset and the mild degree of the inflammatory symptoms, it may have existed for a considerable time before the patient consults a physician, and then many times a microscopic examination is necessary to clear up the diagnosis.

I believe that more than eighty-five percent of all cases of gonorrhea involve the posterior urethra, whatever the method of treatment and however early and carefully it may be carried out.

Gonorrhea is the most loathsome of all the acute contagious diseases with which we have to deal. It would be useless for me to attempt to bring to you anything especially new upon this subject. The history of gonorrhea is as ancient as the history of the human race. It is found wherever two or more people are gathered together, usually. It is the most prevalent disease today and causes more suffering than any other.

I do not like statistics, but I shall quote a few taken from the Journal of American Medical Association of recent date: "It is estimated that annually seven hundred seventy thousand males reach early maturity; that at least sixty percent, or four hundred fifty thousand, of these young men will at some time become infected with venereal disease—twenty percent before the age of twenty-two; fifty percent before the age of twenty-five and over eighty percent before they pass the age of thirty."

This is what is happening to the young men reaching sixteen years of age in any one year in our country of boasted prophylactic and preventive medicine.

"Morrow lays to gonococcus infection alone eighty percent of all deaths from inflammatory diseases peculiar to women, seventy-

*Read before the Iowa State Medical Society, Des Moines, 1913.

five percent of all special operations on women and over sixty percent of all work done by the gynecologist; fifty percent or more of the infected women are left irremediably sterile besides the number whose offsprings are still-born, premature, weakly, diseased or mentally defective."

Preventive and prophylactic measures are practically unknown and ignored in connection with gonorrhea, while great sums of money are spent and untold efforts are being put forth to protect the youth of our land from many diseases not nearly so far reaching in their evil results.

This work of prophylaxis should be begun with the boys and girls while in school. It should be taught them as regularly as arithmetic or grammar. They should know the dangers of all venereal infections, the ease with which they are acquired and their evil effects, and in connection with this they should be taught the facts concerning all sexual and generative functions.

No use longer leaving this sex proposition to father and mother, they will not do their duty in explaining such subjects to their children and besides, the greater number are incompetent to do it as it should be done.

When proper instruction is given to the youth of our land along this line, the flippant saying, "I'd as soon have a dose of clap as a bad cold," will no longer be heard, but a dose of clap will come to hold for each boy and girl a dreadful nightmare of pain and suffering of the most repulsive kind, and they will know the possibilities of the many dire complications which may accompany this disease.

The careless and flippant manner in which the average person looks upon gonorrhea is in a great measure due to the physician, his lack of interest in treating and caring for the unfortunate person who becomes infected. However, all the blame cannot be given the physician. Many times, in spite of all his efforts, the patient will not carry out his instructions nor come for proper treatments. This lack of proper attention on the part of the patient is due most often to ignorance of the consequences which may follow his neglect.

The following is about the usual manner in which a case of gonorrhea is treated: A young man comes to your office and tells you he has a dose of clap, and, "Doc, you can cure it in a few days, can't you?"—is the usual question. Without taking the time or going to the trouble to make an examination, you take his word for it that he has it alright. You give him a shot-gun prescription for cubebs, copaiba, metylene blue, and some calcium sulphide to make his breath smell bad and tell him to come see you again in a few days. When he returns he is feeling badly; he has a foreskin swollen up large as a horse collar; his urine burns when passing like a red-hot iron; the entire pendulous portion of his penis is swollen and inflamed; he has chordee every night till he is about ready to go out and

do the Judas act. The laxity with which gonorrhea is ordinarily treated is positively criminal, whether the blame is to be laid to the physician or to the patient.

There should be some way to compel a man infected with gonorrhea to take the proper course of treatment to rid himself of the disease, whether this course be long or short. It should be some one's duty to be sure, by the proper methods of examination, that every infected individual is cured before it is possible for him to marry or in any way spread the infection.

To show how imperative it is that such steps should be taken, I desire to give you one illustration of a young woman I was called to see about two years ago, and this will suffice for all I have to say at this time on gonorrhea in women. This is a typical picture of the awful ravages of acute gonorrhea conveyed to a pure innocent wife.

I found a woman, twenty years old, married six or seven months. She was suffering such acute pain her husband could scarcely keep her on the bed. Until the three preceeding menstrual periods she had been normal, but at those three periods she had suffered pain and the flow had been much more profuse than ever before. She had scalding and burning urination, had to get up to urinate many times at night, and, because of the pain and suffering and loss of sleep, she was extremely nervous. The vulva was swollen and edematous; the labia stiff and sore; the urethral meatus was red and congested. Pressing the finger forward on the urethra, pus oozed from the meatus. The vaginal mucous membrane was covered with a sticky-yellow pus and mucous. The examination was extremely painful, though done as carefully as possible. I treated this woman for over two months, when she left the city. She was in fair condition, though not well. I heard from her and within the year she had miscarried at three and one half months and was sick for weeks. Soon after her recovery from the attack, they moved back to our city and when I saw her again it was during a menstrual period, and found her greatly reduced in strength and weight and suffering intense pain. She dragged along until last December, when I removed both Fallopian tubes, pus tubes. She has since gained rapidly in weight and now works every day, but no more married life for her. I know that her husband had had gonorrhea and absolutely disregarded all advice as to himself and his wife.

Again I say, it should be some one's duty to see to it that these infected individuals are cured. An unscrupulous man or woman running at large with a gonorrheal infection is more to be feared than all the measles, chicken pox, small pox and scarlet fever cases that may be in any community.

If we are going to care for these cases, we should be willing to acquaint ourselves with the latest methods of treatment and see that in every case these methods are properly carried out by the patient,

and, as a general rule, if we put it up to these unfortunates in the right way and show them we are taking a proper interest in their case, we are able to hold them the necessary time to effect a cure. We should give them every attention the graveness of the disease demands at all times. If not willing to do so, we should send them to some one we know will give them every needed attention, as by timely and proper methods of treatment we know that the greater number of grave complications can be avoided and a cure more readily effected.

The first thing to be done when the patient comes to us with a gonorrhea is, after examining him thoroughly, to instruct him as to the care of himself so that he may avoid all factors which effect the disease unfavorably. He should be advised as to the manner of his living. He should be cautioned as to the danger of the discharge to himself and those with whom he associates. To protect himself, as well as others, he should at all times wear a gonorrhea bag. These bags can be had of proper size and lined with rubber tissue. A pledget of cotton can be placed in the bottom of one of these bags and changed often as necessary to keep clean. This bag also keeps the clothing from injuring the penis and increasing the liability of phimosis by irritating the prepuce. He should never pack cotton under the foreskin to control the discharge. He should avoid violent exercise. He should refrain from all sexual excitement. He should have a bottle of one half alcohol and one half water with which he should keep his foreskin carefully washed all the time. He should not drink alcohol in any form, nor carbonated waters. He should avoid hearty and rich foods. He should take frequent hot baths, drink large quantities of water and milk and keep his bowels moving regularly and freely. For the painful urination, probably the best thing is soaking the penis in as hot water as can be borne. This will always relieve the inflammatory soreness of the pendulous portion of the urethra for a time.

Internal treatment in gonorrhea, with any idea of effecting a material change in its course, is a doubtful procedure and liable to cause serious digestive trouble if pushed too freely. Of internal remedies, urotropin has given me the best results. I give it in five gr. doses every three hours during the day for two days, then every four hours. I have had some interesting experiences with this drug. In three cases, we had marked hematuria. One of this number had it very bad and had only taken forty gr. of the urotropin. A number of others complain of severe backache over the kidneys; or of a constant desire to urinate, due to irritation of the neck of the bladder. These symptoms all quickly disappear as soon as the urotropin is stopped.

The only other drug I use internally to speak of at all is oil of santal, in ten minim capsules. This seems to exert a soothing effect

upon the mucous membrane of the genital canal and allays the urethral irritation to a marked degree. When we have a urine that is too acid the drinking of alkaline waters will give some relief. In those cases of posterior urethritis with great bladder irritation, doses of atropin, one-hundredth gr., repeated hourly for two to four doses, usually relieves the tenesmus.

Gonorrhea is a local disease and must have local applications to remove the causative agent. Local treatment has given the best clinical results.

Abortive treatment is rarely successful, as the patient seldom presents himself until he has a profuse discharge, though occasionally we get the case soon enough to try abortive methods. We should be sure of the presence of the gonococcus by use of the microscope before any method of abortive treatment is begun. All such methods, however, are exceedingly painful and as a rule fail. The irrigation method of treating acute gonorrhea has been abandoned because of the injurious effects upon the inflamed mucous membrane.

A small hand syringe is the safest and most efficient means of applying solutions to the inflamed urethra. Glass or hard rubber may be used, with a blunt-tip and having a capacity of two to four drams. The quantity injected will depend, of course, upon the degree of inflammation and size of the urethra. We should use enough to dilate the urethra without causing any marked discomfort. We should carefully instruct each individual who is having his first experience with injections as to the proper manner of using the syringe and as to its care. Scrupulous care as to the proper cleansing of the penis and boiling the syringe before each injection will avoid the danger of adding a mixed infection to the already existing gonorrhea and mixed infection is often more difficult to cure than the gonorrhea and is the cause of many of the long drawn out and stubborn cases. The average patient with gonorrhea thinks he cannot possibly obtain hot water to cleanse himself, he will be found out, so he hides his syringe and bottle of solution at the barn and uses a horse stall as his toilet chamber. To avoid these troubles, I now use a bottle fitted with a syringe having a rubber stopper and keep the bottle filled with a two or three per cent solution of carbolic acid. This is of sufficient strength to keep the syringe clean, and occasionally it can be boiled and the solution changed. This necessitates the carrying of two bottles, but is a great improvement over the old way after all.

The fellows who suffer with prostatitis, vesiculitis, epididymitis and orchitis and curse the day they were born, also the doctor, are the ones who neglect themselves and use an old dirty syringe from first to last without washing, let alone boiling it.

Silver nitrate is the best single remedy for a solution and is used in varying strengths from one to three thousand to one to two thousand.

Of the silver salts, protargol and argyrol are most extensively used. Argyrol has never proven a satisfactory remedy in my work, although occasionally I use it during the first week of treatment, in a twenty percent solution, chiefly because it is non-irritating and is usually borne nicely by the inflamed mucous membrane.

Protargol has given much greater satisfaction. It is more penetrating and sure in its action and seems to possess greater bactericidal power.

During the first week or twelve days I give the patient a solution of silver nitrate, one to three thousand, this is usually well borne and does not discolor the hands nor clothing, and this fact is a great big item in its favor. I find the most satisfactory method of instructing a patient as to the proper manner of using a syringe is to give him his first treatment myself, and when I can get the patient to come for them I treat him myself at least three or four times a week. As the inflammation lessens and the discharge decreases, the strength of the injection solution should be increased to one to twenty-five hundred, then to one to two thousand as seems to be well borne.

The larger percentage of cases are almost well by the end of the third to fifth or sixth week. When all the symptoms are rapidly subsiding, I examine microscopically for the gonococci at least once a week, and if I fail to find them I try giving an injection much stronger than the routine one, and if the gonococci are present this usually will cause an exacerbation of all symptoms. If so, the routine treatment is again resumed.

In this short paper and limited time, I cannot discuss the many complications of this disease, but must mention posterior urethritis because of its frequency. In this condition I pass a soft rubber catheter back to just within the prostatic portion of the urethra and instill about 20 drops of a 2 percent protargol solution or silver nitrate, 1 to 1000. Instead of the catheter, the Ultzman instillating syringe may be used.

In conclusion, let us, as physicians, see to it that the proper legal steps are taken to curb this rapidly spreading disease:

- (1) By prohibiting the marriage of the infected individual.
- (2) By compelling those unfortunates infected to continue treatment till cured.
- (3) By teaching the boys and girls of our land the truth as to all venereal diseases.

Discussion.

Dr. C. S. Kennedy, Logan: There is one point the doctor brought out I want to refer to, and that was his reference to future motherhood and fatherhood. I want to say, if you will talk to every girl or any one else who comes to you, and tell them how it is possible for this disease and its complications to come about, and how it is carried, if it is their first transgression, you can bank on it that she will know before she submits herself to exposure again, and if she understands the anatomical construction, she

is going to demand of that young man a certificate of health from some physician—from her physician, the one she knows she can trust. It is up to the medical profession to educate the men and girls who in future generations will be fathers and mothers. If we do this, we will not have to agitate the question of legislation. Legislation will be a failure as long as we do not educate the young men and women upon this important subject.

Dr. Henry Albert, Iowa City: The essayist said it should be someone's duty, by proper methods of examination, to see that a person is cured before such person is permitted to marry, or in any way spread the infection. That, however, is a very difficult procedure. Formerly all we had to depend upon was the clinical evidence. We all know that such alone is not sufficient. A person may not have any discharge and yet the gonococci may be present. On the other hand, there may be still some discharge and that discharge continue for a long time, and yet the gonococci may be absent.

Then came a time when it was believed that this should be largely controlled by laboratory examinations for the specific microorganism; if you found the gonococci, that would be sufficient evidence. But, very often, the gonococci which we know to be present are not found on such examination.

More recently methods have been introduced for determining whether or not the individual is still suffering from the disorder by the complement fixation test similar to the Wassermann test for syphilis. Such, however, requires special laboratory skill. In this connection I would like to say that I believe the physicians of a country could well arrange to band themselves together, and have, in connection with their hospital, a well equipped laboratory and have some laboratory man take entire charge of this work and various other tests.

More recently, Dr. Irons of Chicago, has developed the so-called cutaneous test. He has found that there is developed in cases of gonorrheal infection, a cutaneous reaction, very similar to that shown by the tuberculin test. If this will prove to be sufficiently reliable, it can easily be employed by every physician.

Dr. R. A. Weston, Des Moines: I want to congratulate Dr. Jarvis on bringing this subject before us. It has only proved to me the unreliability of the Complement Fixation test. Any person who has joint infection, produces antibodies in the blood. Long years after the individual has had gonorrheal arthritis he will show a positive reaction, when in reality he is in no way infectious. As to the taking of large doses of vaccine which will produce discharges years after the infection, shows that the process is still active in some portion of the genito urinary tract. It is a fact that the Complement Fixation test is not as reliable as the injection of large doses of vaccine.

Dr. J. C. Ohlmacher, Clarinda: In an endeavor to treat certain complications of gonorrhea, such as gonorrheal arthritis, it has become a procedure of certain men to isolate and cultivate the gonococcus from the shreds found in the urine. This can be successfully accomplished very frequently years after the acute stage of the disease has subsided. This is surprising, and illustrates the well known possibility of these germs remaining more or less latent in the organism for long periods.

A method of diagnosis not mentioned by the author or Dr. Albert, and successful in the hands of several opsonists, is that of employing large doses of gonococcus vaccine. This sets up a severe negative phase resulting in an abundant urethral discharge, in which the gonococci are found.

A CLINICAL CONTRIBUTION TO THE STUDY OF UTERINE FIBROIDS*

MARY H. McLEAN, M. D., St. Louis.

Dr. G. Brown Miller states that fibroid tumors occur in from twenty to thirty per cent, of all women reaching thirty-five years of age. Moynihan of England estimates their frequency at about twenty per cent. So frequent are these neoplasms that all gynecologists and most general practitioners come into charge of a number of cases; and it seems worth while, now and then, to exchange experiences, and to secure from free discussion more light on the several problems which they present.

The etiology of myofibromata is still obscure. It has been observed by many that they develop more often in the colored race than in the Caucasian, and are more frequently found in brunettes than in blondes; but a working theory has not been found to fit these facts. Dr. H. A. Kelly thinks that they probably exist in fetal life, in a diminutive form; although they do not usually develop until middle life.

The question of heredity has frequently excited discussion. I have, myself, operated for multiple uterine myofibromata in four sisters of the family, and in three sisters of another family. But heredity has not been proven in any satisfactory way. The etiology, therefore, remains for future investigators to elucidate.

Sub-mucous fibroids are more apt to come under professional observation at an early stage than either interstitial or sub-peritoneal fibroids, because of their greater tendency to hemorrhage. In spite of this tendency and history, however, some such tumors are allowed to grow to enormous size before interference is permitted. One of my early cases was a neglected hemorrhagic case. The patient, past fifty years of age, had been a sufferer for many years from pain, hemorrhage and a disagreeable, irritating discharge. One attempt at vaginal extirpation had been made a few years previously; but the frightful hemorrhage encountered in attempted morcellation of the large mass caused the operating surgeon to desist from further effort. A very tight tamponade, left in situ several days finally stopped the hemorrhage, and the patient left the hospital without any relief.

With knowledge of the previous experience, we performed an abdominal hysterectomy. The tumor had stretched the uterine walls into almost papery thinness, had entirely effaced the cervix, and had very much disturbed the landmarks. We succeeded in tying the large vessels, and extracting the tumor; but were obliged to use gauze packing to control persistent oozing, draining into the vagina.

The patient suffered from severe shock for two days; then ral-

*Read before the Society of Iowa Medical Women, 1913.

lied, and for three days made notable gain in strength, in spite of some continuous leaking. The vaginal tamponade was removed and renewed on the fifth day. On the sixth day the patient died suddenly of pulmonary embolism.

A second interesting case of sub-mucous fibroid came under our care in 1903; age, 28. We found a bleeding mass the size of a lemon, protruding through the dilated cervix and attached by a broad pedicle to the right side of the uterine body near the fundus. We succeeded in separating the tumor with sessenoid and scissors; packed the cavity with iodoform gauze for 48 hours. and had a good recovery.

Three years later, in 1906, the patient gave birth to healthy twins; but soon after the labor noticed a hard lump in her right side. Was delivered of another healthy child in June, 1910. Had no post-partum hemorrhage after either labor, and had normal convalescence. For some time before and after the birth of the last baby, and occasionally, up to May 1912, the patient used a catheter to empty the bladder, without experiencing any disagreeable results.

In January, 1913, the patient consulted me because of increase in size, and very profuse menstrual periods. We found a large nodular uterine mass, reaching a bit above the umbilicus, and pushing into Douglas' cul-de-sac. There was also a deep bilateral cervical tear, extending into the vaginal vault, and torn levators, causing rectocele. We repaired the perineum and the posterior vaginal wall, and then did an abdominal hysterectomy, leaving the healthy right ovary on top of the shelf made by united broad and round ligaments. The patient left the hospital in excellent condition, at the end of three weeks.

A third case of sub-mucous fibroid was in a single woman of 34, who had suffered from increasing blood-loss for 14 months, and for six months had noticed a lump in the abdomen. When I saw her, the abdomen was as large as in an eight-months pregnancy and she was very anemic with hemoglobin of about 40 per cent. After building her up to between 60 and 70 per cent. hemoglobin we operated and removed the uterus, containing a large fibroid undergoing mucoid degeneration.

Fibroids demand attention—not only for themselves, but for the frequent complications accompanying them. They may be complicated with tubal inflammations and infections, with unilocular, multilocular, or dermoid ovarian cysts, with bowel adhesions, with pregnancy, or with malignant degenerations, inclusions, or associations.

One of the most interesting complications was in the case of a colored woman, aged between 50 and 60, who had an immense fibroid uterus of many years' existence, which was adherent to nearly eight inches of the transverse and descending colon. The dissection was difficult, on account of the great risk to the mesenteric circulation;

but it was accomplished, and the patient made a good recovery, and continued in hard work for many years.

Another case was complicated with a detached sub-peritoneal fibroid about the size of a kidney, at the left border of the lower lumbar vertebrae. It is possible that the detached tumor had been a sub-peritoneal tumor near the cervical region, which pushed the peritoneum above it, and had become detached. After its enucleation, we packed the cavity with gauze to stop persistent capillary oozing. The gauze was withdrawn on the third day. At the end of ten days, a secondary operation became necessary, on account of an obstructive adhesion between the ilium and the sac of the detached tumor. The patient, fortunately, made a good later recovery.

A third interesting complication was a malignant papillomatous cyst of the left ovary. In delivering the cyst, together with the multiple fibroid of the uterus, the cyst was ruptured. We cleared the field as quickly and thoroughly as we could; but the patient, some years later, developed a malignant disease of the sigmoid, which was, possibly, associated, with the pre-existing malignant growth of the left ovary.

Pregnancy Complicating Fibroids: This complication is not uncommon and sometimes raises a very important question in the line of treatment. It seems pretty generally agreed in recent years that interstitial, or sub-peritoneal fibroids, well up in the body or fundus may safely be left until after delivery; whereas, tumors of any size near the cervix may seriously interfere with the mechanism of labor. In many such cases, myomectomy should be considered, and can be done without necessarily interrupting pregnancy. Sub-mucous tumors may give rise to serious hemorrhage at the time of delivery, if they do not cause premature termination of pregnancy.

Two of my cases are interesting in this connection. One was the case of an unmarried woman of thirty-six who presented herself in the sixth month of pregnancy, with at least two easily palpable fibroid tumors, and with a history of severe pain and of two hemorrhages during the pregnancy. A rapidly increasing nephritis in this case finally decided the question of operative interference; and a Porro was done near the end of the sixth month.

The specimen showed one large, and several smaller sub-mucous fibroids, besides four or five moderate-sized interstitial and sub-peritoneal tumors. Such a combination would certainly have entailed great risk of serious hemorrhage after delivery at term, had the kidney condition permitted the completion of pregnancy.

Another case, aged 34, presented herself at the end of the fifth month of pregnancy, with two palpable fibroids; one very near the cervix on the right side, and the other higher up on the left. During six weeks' observation the lower tumor seemed to grow considerably and surgical interference was carefully considered. The patient was

informed of all the risks and advised to wait developments, even though a Caesarean section should become necessary. After the seventh month the tumors ceased to grow, and forceps delivery was accomplished with little difficulty. Six months after delivery, both tumors could hardly be identified, having shared the involution of the uterus.

A third case was interesting, simply because unusual. In a Caesarean section, at term, on a Russian Jewess, aged 23, made on account of a bi-ischiatic diameter of outlet of barely two inches, I removed six sub-peritoneal fibroids, varying in size from a walnut to a lemon. Examination a year after the section found no trace of any further fibroids, and the uterus was in good position and of normal size.

Complication of Malignancy: In a paper read by Ellice McDonald, of New York, in the Atlantic City A. M. A. Meeting, June, 1909, he said:

"It is probable that malignant change will result in one case of every twenty patients between the ages of 40 and 50; one case in every 8 of patients between 50 and 60; and one case in every 4 patients between the ages of 60 and 70."

Dr. Thomas S. Cullen, of John Hopkins' University, was one of the first investigators to revolutionize our ideas of the relationship between fibroids and malignancy. We had been taught, for several decades, that fibroids were almost immune to malignancy. Cullen found sarcomatous degenerations and adeno-carcinomatous inclusions in careful second examinations of many old specimens of fibroid tumors.

Dr. Rufus B. Hall, of Cincinnati, in a paper before the American Association of Obs. & Gyn., in September, 1912, said:—

"Taking a large series of cases, numbering more than five thousand, operated by different surgeons, cancer was found to be present in from 3 percent, to 8 percent of all tumors removed.

"The writer is of the opinion, judging from his own experience, that the latter figure is more nearly correct."

Bumm, of Berlin, finds sarcomatous degeneration in 10 per cent of fibroid tumors.

A very interesting case, illustrating this point, came under my care a few years ago. The patient, a very busy woman of affairs, had numerous small pedicled fibroids around the uterus with profuse and irregular menstruation. A thorough curettage checked the hemorrhage, and the patient passed through a fairly comfortable menopause. She was asked to report, even in the absence of symptoms, every four months. Feeling unusually well, she failed to follow advice, and only came for examination a full year after the last visit connected with the curettage. I found that two of the fibroids had grown rapidly during the year, and urged immediate operation. As her home was in Cleveland, I sent her to Dr. Crile

for operation, who reported to me sarcomatous changes in the fibroids, as the cause of rapid growth.

Another case had an interstitial fibroid of moderate size of several years' known history. Operation had been repeatedly advised, on account of pressure symptoms and hemorrhage, but the patient refused her consent. After at least seven years of very slow growth, the fibroid uterus suddenly developed malignant changes, and the woman died after eight months of great suffering, with a large sarcomatous mass over-filling the pelvis.

The Question of Surgical Treatment: Noble, of Philadelphia, in 1903, studied statistics from 688 cases treated by himself and three other surgeons; he concludes, that "without operation, at least one-third of the cases will be fatal; one-fourth chronically invalided and most of the remainder incommoded".

Dr. G. Brown Miller says: "that the mortality for conservative treatment of myomectomy and hysterectomy, in all cases, is from two to ten per cent now, and would be lower, in earlier operations.

Myomectomy is generally the operation of choice in young women and child-bearing women, when the tumors are not too many nor too deeply buried in the uterine wall; but, in women of many tumors, and in women near the menopause, the consensus of opinion is in favor of hysterectomy, except in cases of very small tumors, which produce no symptoms, and which can be carefully observed at intervals of a few months."

Dr. Ellice McDonald, in the study of seven hundred cases, makes the following statement:—

"in view, then, of the large percentage of serious degenerations and complications of fibroid tumors, and of the great increase of malignant and other complications, with age, it seems wise that a physician should advise all patients who have fibroid tumors to have these growths removed; for, if they are not removed, the probabilities are that the dangers from them will increase with age."

Dr. Rufus B. Hall, in the paper quoted above, also says:—

"The number of cases showing heart disturbances is very large, amounting to 40 percent, in late cases."

He favors early operation for all cases, with symptoms unrelieved by two or three months of palliative treatment.

Professor Schauta, of Vienna, also advocates early operation for uterine fibroids, because of the frequency of sarcomatous degeneration, the tendency to carcinoma of uterine mucosa, the risk of cardiac atrophy, and endocarditis, and the danger of kidney complications.

In the Freiburg Clinic, the Roentgen Ray is being much used, and operation is less in favor.

After all, each case requires individual consideration when the question of operation arises. There are many minor considerations,

which often influence for or against surgical operation, when surgery is not imperative. From a study of recent literature, however, it is evident that there is a strong tendency among surgeons, to advise early operations for uterine fibroids when the symptoms are sufficiently in evidence to cause the patient to seek professional advice.

THE VALUE OF THE ROENTGEN RAY AS A DIAGNOSTIC AID IN DISEASES OF THE ACCESSORY NASAL CAVITIES*

RALPH H. PARKER, M. D., Des Moines.

Since the Roentgen Ray was discovered in 1896 it has become a valuable aid in both the diagnostic and therapeutic fields of medicine.

It is of special interest to the rhinologist in the diagnosis of decreased conditions of the nasal sinuses and as a means of outlining their size and form prior to operation.

The x-ray will not supplant the already established methods of diagnosis, but will be of value rather as a supplementary help. While it will have its limitations on account of the difficult technic, the impossibility of always having the services of a competent radiographer and the expense to the patient, yet it affords one more method of working out an obscure case of sinus trouble. When we consider the role the sinuses play in modern rhinology, we should welcome this method of diagnosis as a court of last resort.

It is not presumed that rhinologists will become skilled in the technic of x-ray work. This is a field of the radiographer who should know how to make good x-ray pictures. The rhinologists should know how to place the patient to get the best shadowgraphs of the different sinuses and he should know how to interpret the plate after it is made. The fluroscope has no place in this work, and the value of the x-ray will depend upon getting clear negatives.

There are no accessory nasal cavities at birth. A small groove marks the site of the maxillary sinus which soon after birth begins to push itself out into the adjoining cancellous maxillary bone. This evaginating process continues until about the time of puberty when the maxillary sinus is completed. The other sinuses form in the same manner, being completed somewhat later in life than the maxillary. This accounts for the small number of sinus affections in children. It also explains why the mucous membrane lining is of the same character as the mucous membrane lining the nasal cavity proper.

There probably was a time when the human race was young that the sinuses were large cavernous annexes to the nasal space for the better distribution of the filaments of the olfactory nerve. As we

*Read before the Iowa State Medical Society, Des Moines, 1913.

have moved upward in the scale of civilization and have ceased using our sense of smell for the purpose of procuring food, these cavities have become gradually closed off from the nasal space and they now pass along with the gall bladder and appendix as remains of tissues having had at some previous time a more active function. They are now tissues of low resistance and the cavities have inadequate drainage.



Figure I. Radiograph of the head. Sinuses normal. The form of the maxillary, ethmoid and frontal sinuses is outlined with small arrow-heads.

We may think of an x-ray picture of the sinuses as a shadow of the head thrown upon the screen. The sinuses when normal are cavities filled with air, and will cast a lighter shadow than the surrounding tissues. The maxillary sinuses when taken with the head in the usual antero-posterior position will show as kidney shaped cavities on either side of the nasal space. The frontal sinuses will lie above and the ethmoid and sphenoid sinuses between the orbital spaces.

A study of the shadows cast by the sinuses will furnish us quite valuable information as to their condition.

Any exudate within the cavity or any thickness of the mucous membrane lining the cavity will produce a denser shadow than normal. Under this class, are the acute and chronic inflammations of sinus mucous membrane.

Fluid within the cavity will cause a dense shadow. Under this class we have empyema of the sinuses.

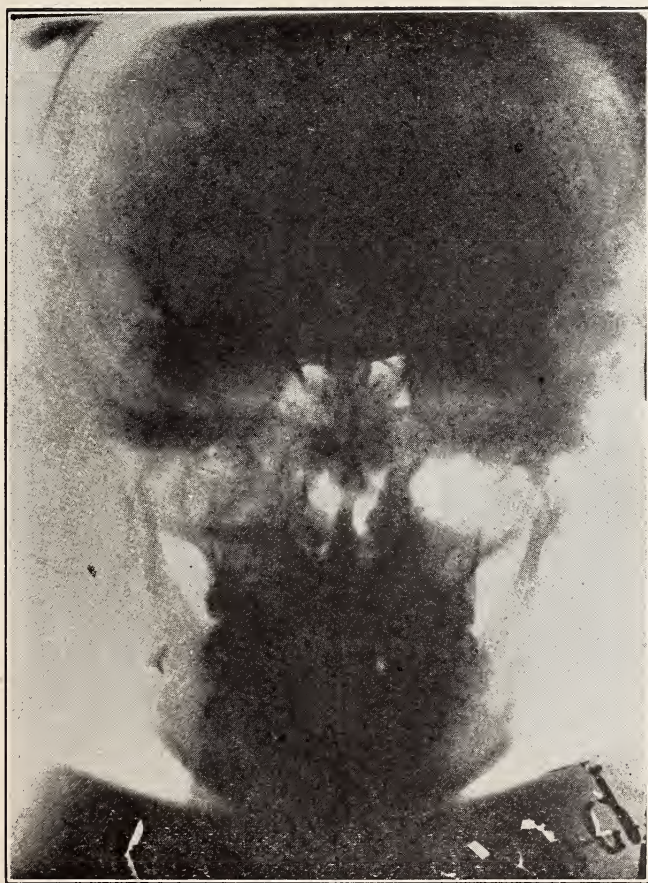


Figure II. Empyema of the right maxillary sinus. The dullness of the right maxillary sinus should be compared with the left one which is clear. (Normal)

Tumor growth of any nature will cast a denser shadow.

So in studying radiographs we may be able to locate the diseased sinuses by the denser shadows cast by them, but we cannot differentiate between inflamed conditions, fluids or new growths.

The head has been photographed from different angles for the purpose of getting clearer pictures of the different sinuses as for instance the frontal and maxillary are best shown by an antero-pos-

terior position, while the sphenoidal sinus is best shown by a profile view.

We probably could obtain more information by getting x-ray pictures with the head in several different positions but for practical purposes we will probably content ourselves with radiographs taken with the head in the antero-posterior positions.

Pfeiffler in his early work with the x-ray, placed the plate under the chin in a horizontal plane and the x-ray tube above the head or



Figure III. Empyema of the right frontal sinus and the right maxillary sinus. These form a distinct contrast with the opposite sides which are clear. (Normal) Both the right and left ethmoid and sphenoid sinuses are normal.

reversed this position by placing the patient upon his back with his head hanging over the end of the table, the plate being beneath the head in a horizontal plane and the x-ray tube above the chin. Either of these planes were unsatisfactory as the denser bones of the face region came in line of the sinus areas giving an indistinct picture.

As the profile position is used, the plate is placed on one side

of the head and the x-ray tube on the other. This method is not in general use as the right and left sinuses of any pair, overlap each other in the radiograph.

The antero-posterior position gives the most information. The head is placed face downward upon the plate. The x-ray tube is placed twenty inches directly above the occiput. In this position, the frontal and maxillary sinuses are clearly outlined. There is an overlapping of the sphenoid and ethmoid cells as they lie in the same plane before backwards.

In Frankel's clinic in the old Charité Hospital in Berlin, practically all sinus cases are radiographed. There is a sacrifice of clearness in transferring the picture from the negative to the positive. On this account these views will not show quite as clear as if the negative were used.

These lantern slides have been made from negatives of selected cases taken in Frankel's clinic while I was there. In all of them the x-ray diagnosis has been verified.

Cuts from the lantern slides are reproduced here to illustrate some of the points brought out in this paper.

RADIOGRAPHS.

1. Sinuses normal, (see fig. one)
- 2-3. Empyema of the right maxillary sinus. (see fig. two)
4. Tumor of the right maxillary sinus.
5. Empyema of the right maxillary and the right frontal sinus. (see fig. three)
6. Ozena-large nasal cavities. Dullness of all sinuses.
7. Empyema of both maxillary sinuses and the right frontal sinus.
- 8-9. Nasal cavity filled with polypi. All sinuses dark.
10. Empyema of the right frontal, right ethmoid and right maxillary sinuses.

THE SURGICAL TREATMENT OF PYOSALPYNX*

HOWARD DEVIR GRAY, M. D., Des Moines, Iowa.

The beginning appreciation of conservative surgery in the treatment of pyosalpynx is bringing forth a favorable comment.

The falacy that the economy can endure as an integral part fully as well as when a unit is rapidly being discredited and that to insure a high degree of efficiency it must incorporate as nearly as possible all its components, anatomic and physiologic.

The functional activity of the uterine adnexa during the reproductive period is evidence enough that they should be preserved when at all possible.

The treatment of uni- and bi-lateral pyosalpynx deserves much repression at the hands of surgery if we are to perpetuate the reproductive female instead of the proverbial army of the sterile co-incident though it may be to early and complete resection of ovaries and tubes.

If then we can promote a condition in the female which will react from the pathologic to the physiologic without excision, removal or partial resection of these organs we will have accomplished much toward conservation in these conditions.

Admitting the diagnosis and actual presence of pus tubes our attention is directed to the correction of the same by some accustomed method, medical or surgical, and the adoption of such measures as seem indicated to produce the best restoration of the parts.

The surgical treatment of pyosalpynx must needs be palliative or radical and the radicals have by a large majority with many good operators, a status, no doubt due to the fact that many surgeons are creatures of habitual technic, which is altered all too infrequently in a given number of cases with analgous or semi-analgous clinical findings.

The equation then should be "operative interference for immediate evacuation of pus troubles, or abdominal section" and its attendant remote end results. It is apparent that there can be little, or neutral grounds for a surgical procedure, the technic of which should be made to harmonize, if possible, with local conditions of patient, yet not overlooking the ill omen of "general and systemic complications", as weakened heart muscle, local and systemic lymphangitis, septic emboli or general pyema.

Much has been written relative to laparotomy with drainage and many happy results are observed, but is to the less radical operation that our attention is directed. The vaginal route of infection occurs in about 86 percent of all cases of pyosalpynx, leaving 12 per-

*Read before the Polk County Medical Society, June 1913.

cent to follow as the direct result of extension of septic processes within the uterine cavity. Two percent are hematogenous, largely tubercular. Anatomically reviewed, the vagina is the logical avenue of drainage, being a natural tube from the external genitals to a point adjacent to the infected area, and offers a much safer tissue through which to establish drainage, because of its natural immunity to infection.

Much adverse comment is heard on the procedure of vaginal puncture, as limited space,—little or no direct vision to operative field,—injury to ureters, bladder or bowels, all of which are possible but rather improbable. If we concede a pyo-salpinx as manifest clinically on vaginal examination, why not correct it along the same avenue? Thirty two cases, operated on, in the several degrees of infected processes, by vaginal section and drainage, elicits the following technic:—"do not attempt to make puncture or direct the incision over the infected area, but always near the uterus. Always anterior to a medium transverse line through the cervix. Never open, and then close artery forceps or scissors while introduced in puncture. Never endeavor to incise too deeply. Never make tension on tissues in time of puncture. If pus is not obtained where suspected, pack, under pressure and wait for subsequent tissue change. Never drain with gauze, but with tubes, both ends exposed long axis parallel with tube, the exception being "T" tube, in cul-de-sac with short arm." In review of the above cases many have at time of operation immovable uterus, large amounts of inflammatory exudate and all the attendant discomforts. Three to eighteen weeks following operation, uteri became movable, pelvis clean and function restored.

The following advantages are claimed: less hazard at time of operation, the establishment of drainage at most dependent part, limited, or no post operative adhesions, restoration of tube function, if any normal membrane be intact and convalescence uneventful.

Discussion.

Dr. L. E. Kelley: I think the doctor has dealt with just one form of pyosalpinx. If I understand him right, he is going to deal with all cases of pyosalpinx with this same method. My idea of the treatment is that in the acute stage of gonorrheal, which is the most frequent infection, that the patient needs nothing more than confinement to bed and ordinary symptomatic treatment. Most often the points of pus formation are in the cul-de-sac and at the inguinal canal. There should be absolutely no operative procedure until we are sure we have pus. In these cases there usually has taken place a secondary colon bacillus infection. If the infection is entirely within the tube and there is no lymphatic infection around, merely the rest treatment will clear them up until the gonococcic pus becomes sterile, and you have resulting either a small, contracted, hard tube, or hydrosalpinx. But in all acute cases, if they were to be drained vaginally, I think we would be liable to introduce infection, and probably stir up things, and have them run a more acute course.

I think Sampson, of Albany, in about 1906 came out with a paper on the treatment of pyosalpinx in which all cases during the acute infection were kept confined to bed on a liquid diet, and the best of surroundings,

sunlight and fresh air, and tonic treatment, some iron or strychnia, or something along that line, and during the most acute part of the infection normal salt solution was given by the rectum, and the patient's general condition bolstered up. If, however, there was a secondary rise, or the patient got worse, examination was made to determine whether there was secondary infection or not. If there was, and pus was located, drainage was established.

We know that during the last five years the reports from all gonorrheal clinics where the conservative method is used show that there is practically no mortality from gonorrheal infection; whereas before, when the cases were operated on during the acute stage by the abdominal route, there was a high mortality, because these cases do not stand shock well, and because of peritonitis and secondary infection.

I may have misunderstood the doctor, but I believe that drainage should be established only in cases where there is infection outside of the tube in the pelvis. Otherwise, these cases will clear up and the uterus will become movable, and probably when examined a year later you will find either a small tube or hydrosalpinx.

I remember one case distinctly which was opened. There was gonorrheal infection from the cervical and urethral smear, and the history and everything pointed to gonorrheal infection. The doctor looked into the pelvis, and as I assisted I also had a look. In this instance the tubes, uterus, ovaries and everything were bound down in one mass. He backed out, and the woman had a stormy recovery, was in the hospital a month or so and went home, and three years later was delivered of a normal child in the maternity ward of the same hospital. This case was reported in Surgery, Gynecology and Obstetrics about a year ago.

I think we cannot be too conservative in gonorrheal infections. In tubercular infections of course there is only one thing to do, according to August Martin of Berlin, and that is to remove the tubes, uterus and all infected tissues that can be found. Of course there are other infections which are not so often met with as gonorrheal infection. They are treated along the same line. When they do not continue to improve with medical treatment, surgical interference must be made.

The treatment outlined by Dr. Gray is the only safe procedure in pus cases. The abdominal route should never be attempted when acute infection is present.

Dr. Robert J. Lynch: In visiting a clinic a short while ago this question came up which the doctor placed in his paper, and which I think is very good, and great pressure was put on by the essayist, upon the question of time in the cases. While that may come under the head of conservation, at the same time if these cases can be carried along over a period of two or three months, that is, carried over the acute stage. It may be of course necessary to puncture or to drain during the acute stage, but if they can be carried over the acute stage, then the vaginal route, seems to me, is the poor route. In these cases that have been carried through their acute course and have gone along and are doing well, and are free from adhesions, we feel that as far as the pus is concerned it will in a short time become sterile and will do no harm. But adhesions such as an adhesion to the omentum, or to the appendix or to certain portions of the bowel, may cause trouble, and I don't see that the operator can do a really good job by going in the vagina to remove one or both of these tubes that he could do much better by going through the abdominal route, and to repair some of the damage done following these pus tubes. So it was made clear to me by several of these cases, the ones that were operated on at this time had been infected from six months to a year and a half before, and one of them there had been a puncture in the cul-de-sac, that the real repair work to be done following pyosalpinx is the work that is caused by these adhesions, cutting the adhesions and repairing the raw surfaces.

Dr. R. A. Weston: I would like to ask some of the gynecologists when these women become sterile in regard to infection. I have asked about every gynecologist I have met that question, and most of them say in three years. But if this gonorrheal infection stays virile in the male ten or twenty years when treated, I don't see how it gets out of the female in three years unless you explain that there is better drainage in the female than there is in a male, on account of the menstrual flow and things of that character. Many of these people that become infected are not married. They want to marry later in life. Then comes up the question, when they would not be dangerous to take on a mate without causing some little

trouble in the family? I am more interested along that line than I am in regard to whether this thing should be drained by the pelvic route, or whether it should be drained by the abdominal route. I think the paper has been very well discussed.

Dr. J. W. Osborn: I am sure many a woman has had her tubes, and ovaries, and uterus removed when it need not have been done. I don't believe that Dr. Gray's procedure is suitable to all cases by any means. I do not understand that Dr. Gray so recognized it. But for cases where it is suitable it certainly is an admirable operation. I think the most of us have seen women who have had vaginal punctures to whom it seemed as if that was the operation of last resort, and that was done a great many times because it seemed that was the only thing they could stand to have done. We have seen these women get well; occasionally we have seen them conceive afterwards.

I have a story I would like to tell on a couple of surgeons of the Polk County Medical Society. I never got them out in a crowd to tell it on them. Some years ago they operated on a woman for pyosalpinx in both tubes, and made a hole in the abdomen you could stick your foot in. When she got well finally they told her that she was perfectly safe; that she was sterile. During her stay in the hospital she was in a ward, and had seen me a few times. Five or six months after she left the hospital she got pregnant and sent for me to come and see her. I went over and said to her, "Why don't you get your other doctor?" "I don't want him. He is a liar." I guess it was true. He told her that they had removed both tubes and the ovaries. But the woman conceived, and I delivered her of a child afterwards. And this was an operation that I think the drainage wound; the amount of gauze they left in that woman, was three or four inches long, the opening, at the time of the operation. Now if this may happen to a woman who has had so severe an operation, why may not a more gentle operation, if you may use the term of Dr. Gray's work, save many a woman her reproductive functions?

In regard to Dr. Weston's question, I would be mighty skeptical about a woman becoming sterile in three years.

Dr. E. B. Mountain: I had occasion to observe a case where the doctor had advised an operation a year or eighteen months beforehand; just a young married woman who had become infected from her husband, who had apparently been cured for some time. Soon afterwards she conceived, and I saw her first when she was confined. Everything seemed normal at the time, but about six weeks afterwards she came to me suffering with profuse leukorrhea. I inquired into the history and learned of the Neisser infection, which was substantiated by the microscope. I treated her by the rest and depleted system, but it did not give her complete relief; so used mixed bacterins, and after three doses the leukorrhea suddenly disappeared, and upon examination discovered that all pain and tenderness had disappeared and that the uterus had become freely movable. The tubes and ovaries could easily be palpated through her thin abdominal wall, and seemed to have become normal. She was confined a couple of weeks ago, and apparently has no more trouble from her previous infection.

Another case was that of a girl eighteen years old suffering with a secondary infection of the tubes accompanying the third attack of appendicitis. Palliative treatment was used until the acuteness subsided, when x-ray and high frequency was applied. Later, when the appendix was removed, the tubes were found to have become normal in size and free from inflammation. I feel that we saved this young girl a mutilating operation by waiting until infection and inflammation had left the tubes, which was hastened by the applied treatment. I take it from the doctor's paper and by the drift of the present literature that we should have more respect for conservation.

Dr. O. W. Lowery: I am a better listener than talker; but I have had several cases along this line that I did not operate on, nor allow anybody else to operate on. They have been relieved through the uterus, and the Fallopian tubes and uterus have drained themselves. Now I have resorted to something like this in a great many of those cases: I have used normal saline and permanganate of potash douches, and if I have a serious case of that kind and can get them to do it, I prepare a bucket with a tube to it that will hold anyhow three gallons, and I use that first full of the saline solution and I follow immediately with the permanganate of potash. If those cases are severe and require attention I sometimes use ten gallons or more of water a day, always two buckets full once a day, and some-

times twice or more. In that way I have found that I have relieved these tubes, and not by operation. Another thing that I gain by this line of treatment. This infection has traveled from the uterus into the Fallopian tubes. You will find that the patient is infected from the external genitals until you reach the Fallopian tubes, and will pass beyond that to the ovaries. I had a case come to me inside of ten days, and there was an enlargement in the right side; you could feel it like a roll on the side; and that case absolutely drained itself from the uterus until it was just as flat on one side as the other. Now I ordered these douches that I speak of and she neglected them. Too much trouble. She came back inside of four weeks and this was all filled up again. And I believe that that woman can be cured by this line of treatment.

I remember especially a case that came from Des Moines that had a gonorrheal infection, and she was confined here in the hospital by one of the leading surgeons in this state. They sent the woman home on a stretcher, and also the babe. I had a time with her saving the babe's eyes by the use of a 10-20 per cent. solution of nitrate of silver, and I used this line of treatment. The woman entirely recovered and I afterwards delivered her of a child perfectly healthy, and she is perfectly healthy.

Of course I have seen these operations performed by Martin, by Goldspoon and by Murphy in Chicago. I have seen them performed here in Des Moines by Dr. Smouse and others. In these cases it is very often that they are not and will not be relieved in this way, but I bring this point out with the object of showing that a great many of them can be relieved, and if there is relief they are benefitted and you have them thoroughly purified and have removed this infection.

Dr. Howard D. Gray: There are a good many things that happen to us, and I presume we are all "granies", so to speak—we stick to the thing that serves us best. Not all have had gonorrheal or tubercular infections. Neither of these are types which you get strictly under the term pyosalpinx, though it may be admitted seventy per cent are Neisserian infection. This is true of infective processes occurring in the tubes (Neisserian infection) that they are not really involved simultaneously. Usually one will undergo an acute disturbance and become quiescent, and then the other will take on an acute disturbance and develop the same conditions as did the former, so that the patient develops, as time goes on, a certain degree of immunity to this. Likewise the infection undergoes a retrograde change and becomes a more tame affair. True, no one, I think, would undertake to institute operative procedure in an acute inflammatory disturbance if he knew it, but would rather wait until the patient could gain resistance along the line of immunization of the tissues around the locally infected area.

There is a different picture, however, in the percentage of ten or twelve in which we have streptococcus, staphylococcus or mixed infection. There are few Neisserian infections, I think, reaching the tube as a plain Neisserian infection. I believe they become mixed while they are yet a pre-tubal trouble. Consequently it is barely possible that they do not quiet down as rapidly as they would were they a purely Neisserian infection. Again we have all seen many tubal infections that did not occur through the uterus at all. There is a small percentage of our tubal infections that are colon bacilli which develop from possible continuity of tissue. They go through these walls like mosquitos through a sieve.

Relating to the long continued douching of these parts in the presence of a leaking tube into the uterus, I think many of the beneficial results we have had are because of the quietude of the patient and the prolonged action of the heat, rather, possibly, than any real antiseptic action of the drug used. The action of heat given under a low fountain, and long continued, has much to do towards raising the resistance of the diseased tissue to a better condition, rather, I think, many times, than the direct result of your antiseptics on your bacterial infection.

The Fallopian tube at the uterine end is extremely narrowed, and you need very little infection to close the lumen, and when the lumen is closed the tube is infected auto-continuously, and in any event a leaking tube into the uterine cavity is not a good thing.

Relative to the doctor's point with reference to adhesions; many times we try to cover up a cut surface and by doing so we think we have minimized the adhesions. Many times we break up adhesions and hope they will never re-form. The rule is they do. But any of you have ever undertaken laparotomy following one, two, three, or four years in the track of extensive drainage continuing over a period of two weeks or longer of

tubal drainage, and then possibly a concrete case of drainage following, maintaining a patulous canal with a granulated area from the pelvis to the integument, I want to say you will get into greater things in the way of adhesions than you will find around a tube which has been drained in situ, and you will get them in a much more undesirable location. Not all cases of pyosalpinx are subject to vaginal puncture or drainage, but I do argue that there is a certain select number of cases which should be, and I believe by good operators are being drained through the normal, natural vaginal channel with a much more happy result than the hazardous affair through the abdomen.

HEMIPLEGIA AND THE HEMIPLEGIA STATE*

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Hemiplegia means merely a paralysis of one side of the body, from whatever cause, but the term Hemiplegic State refers to a quite definite train of symptoms following such a paralysis, supervening in all non-fatal cases and being due to secondary changes in nervous tissue, joints and muscles. I shall, in this paper, discuss some of the more important phases, including etiology, symptomatology, and the hemiplegic state: with the general indications for treatment. Some of the more complicated phases, which, while they are extremely interesting, are of comparatively slight clinical importance, will be intentionally slighted.

The case records and statistics referred to in this paper are taken from a series of fifty cases studied by Dr. J. W. Turner and myself at the Cook County (Illinois) Infirmary.

The main etiological factors of hemiplegia are cerebral hemorrhage and cerebral softening, but tumor and gross injury must also be considered.

The fundamental factors at work in the causation of cerebral hemorrhage are high blood pressure coupled with a lowered arterial resistance at some point in the cerebral circulation. The arteries from which cerebral hemorrhage usually occurs are the middle cerebral, the lenticulo-triarte and the lenticulo-thalamic. These branches are fairly large in a vertical line above the heart, are terminal and have no collateral circulation, and thus receive the full force of the blood stream. The lowered arterial resistance in turn is due to arterial disease, usually an endarteritis, brought on by the natural process of advanced age, alcohol, syphilis, lead, gout, nephritis, gastro-intestinal intoxication, and the acute infections such as diphtheria and scarlet fever. There is no doubt but that there is an inherited tendency to cerebral hemorrhage, and many such cases are reported. Church records a family in which nine out of eleven brothers and sisters died from cerebral hemorrhage. Three of my cases gave a history of death by apoplexy in at least one parent and in one case the father, mother and daughter of my hemiplegic patient died of apoplexy. The oc-

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currence of brain hemorrhage is relatively high up to the tenth year and between the fortieth and fifty-eight years; while young adults and the aged are relatively free from hemiplegia from this cause. The high blood pressure conducive to brain hemorrhage may be a more or less permanent affair as in arteriosclerosis, where the increased resistance of the hard walled vessels is a factor in the causation of hemorrhage, and in nephritis, or it may be a temporary affair as in intense emotional states or during sudden and excessive muscular efforts as in coughing, vomiting or heavy lifting. The stimulation produced by a cold bath, especially after a heavy meal, is sometimes a factor, and it is interesting to note that the sudden changes in barometric pressure as found in our Great Lakes region has been suggested as an etiological factor. My results do not seem to bear this out and I was surprised to find twice as many cases of softening as of hemorrhage in my series, as nearly all of them lived in the Great Lakes region in or near Chicago. I am inclined to think that barometric pressure in this connection is of more theoretical than practical importance. Sixty-three per cent of my cases of cerebral hemorrhage gave a history of having used alcohol, and twenty per cent gave a history of syphilis. One case was paralyzed following scarlet fever. In the other cases no definite etiology could be established. Lead poisoning was not a factor in any case as far as could be ascertained.

The next important factor in the causation of hemiplegia is cerebral softening which includes thrombosis and embolism. For the successful thrombosis of a cerebral vessel there must be present a condition of atheroma or other localized arterial brain disease coupled with a lowered cerebral blood pressure. The arterial disease may be the result of advanced age, syphilis, alcohol, lead or gout, and the low arterial tension of weakened heart and slow arterial flow, conditions supervening in old age and wasting disease; also during sleep the force of the blood stream is reduced and it is common for thrombosis to occur at this time. Cerebral embolism may occur in left sided endocarditis secondary to acute articular rheumatism, pneumonia, typhoid, diphtheria, etc., when a slight exertion may cause the breaking off of emboli which go to lodge in the vessels of the brain. Such emboli may also come from the lungs or even from a thrombosed saphenous vein, in which case there is a secondary thrombosis in the lungs. In both thrombosis and embolism a cerebral vessel is occluded and on account of the poor collateral circulation the given area is deprived of arterial blood, there is some venous congestion due to back pressure from other vessels, the arterioles deprived of nutrition degenerate, fatty degeneration, phagocytosis and finally encapsulation or scar formation result. Infection with abscess formation, meningitis or cerebritis may result but not commonly.

I believe that syphilis is responsible for a large majority of all hemiplegia from thrombosis. Of my cases fifty per cent gave a history of syphilis, with suspected syphilis in about twenty-five per cent more. Alcohol and old age were responsible for eight per cent, the etiology in the remainder being undetermined. Lead, as far as could be determined, was not a factor in any case. My statistics would show that heredity is as much a factor in cerebral thrombosis as in hemorrhage, as five cases of thrombosis gave a family history of apoplexy, two of them in three generations, as against three cases of hemorrhage with a family history of apoplexy, and I see no reason why this should not be true. I do not think that occupation is an important factor in the causation of hemiplegia from either hemorrhage or softening, for while seventy-five per cent of my male cases were of the laboring class, fully seventy-five per cent of admissions to the institution are from the same class. Barbers, salesmen, bartenders and newspaper men make up most of the other twenty-five per cent and as these are also common occupations the figures show nothing of importance except in a negative way. The female cases all gave their occupation as housework.

Brain tumor may cause hemiplegia and at times closely resembles hemorrhage or softening in its effects. Three cases of my series showed symptoms of tumor and one coming to autopsy showed a well defined sarcoma one and one-half by two and one-half inches located on the surface of the left hemisphere in the sensori-motor area. There was an extensive scalp scar and what appeared to be a healed skull fracture directly over the tumor, which supports the theory of traumatic origin of some of these tumors.

I found only one case of hemiplegia following gross injury. The right arm and leg and right side of the face were paralyzed, there was a partial motor aphasia and a blunting of sensation on the paralyzed side. This was the result of a gun-shot wound in the left parietal region. The bullet coming from behind plowed a horizontal furrow about half way between the ear and the sagittal suture, taking with it a large piece of bone. The precentral, postcentral and inferior frontal gyri were involved as is shown by the loss of motion and sensation and the motor aphasia, and also by the anatomical location of the local lesion.

Of my fifty cases softening was the most common etiological factor, being the cause of paralysis in twenty-eight cases, hemorrhage was responsible in fourteen cases, tumor in three, injury in one, with four undetermined. Starr gives hemorrhage as about three times as common as softening, but his figures were based on fatal cases where hemorrhage is no doubt more common.

The important symptoms of hemiplegia are those of its onset, because they differ usually with the different causes, and it is most important to know whether we are dealing with hemorrhage, throm-

bosis or embolism in order to treat rationally and to minimize the extent of the lesion and the resulting paralysis.

With cerebral hemorrhage we have the true stroke. The patient usually falls unconscious while at work. Occasionally there are prodromes consisting of momentary confusion, dizziness and other generalized and vague feelings of distress. At first the face is pale, the pupils contracted and sluggish. Muscular twitchings, motor restlessness and even active general convulsions may occur before the coma becomes profound. The apoplectic state follows. In this state the breathing is slow and stertorous and may be of the Cheyne-Stokes type. The pulse is strong and retarded. The face becomes congested and expressionless and perspiration is free. All forms of sensation are abolished and the limbs are flaccid. The sphincters are relaxed and urinary retention with overflow occurs. Early, the cutaneous and deep reflexes are increased, but they soon subside and tend to disappear, to reappear later and become exaggerated especially on the affected side during the hemiplegic state. The Babinski phenomenon usually develops within a few hours and sometimes within a few minutes after the stroke and persists. The coma deepens and death ensues or gradually in a few hours or days yields to torpor and then consciousness is restored and in the uncomplicated case improvement goes on for some time. Directly after the stroke the rectal temperature is lowered but usually rises above the normal in a day or two. In all cases the surface temperature on the paralyzed side is from 1 to 2 degrees higher than on the unaffected side, and this point is important in determining, before consciousness is restored, the side which is paralyzed. Also vasomotor changes, as increased perspiration, redness and congestion are usually present for a time on the paralyzed side. The sound side is not so completely relaxed and offers more resistance to passive movements. There is also, at times, a deviation of the eyes and head to the side of the brain which contains the lesion or away from the paralyzed side.

The following case of brain hemorrhage is quite typical. J. D., white male, age 65. Alcohol, tobacco, tea and coffee to excess. Family history negative. Past history negative except for typhoid fever thirteen years ago. The stroke occurred one week prior to the examination. Patient suddenly became unconscious while walking in the street. Had been drinking heavily that day. Indefinite history of diplopia prior to the stroke. Examination showed marked paralysis of left arm and leg, no contractures. All deep reflexes were exaggerated on the the affected side. Slight Babinski and ankle clonus. Heart enlarged, arteriosclerosis well developed.

The onset of paralysis from cerebral thrombosis is usually progressive, although it may be abrupt with a sudden deposit of a large amount of fibrin in a vessel previously narrowed by diseases. An embolus may produce sudden and complete blocking of the arterial

channel, with an abrupt onset of symptoms much like those of a typical brain hemorrhage, or it may only partially occlude the vessel and the paralytic state gradually develop as the lumen is gradually closed by the addition of thrombotic material. In cases presenting the abrupt onset we may have loss of consciousness and coma, but in at least half of the cases there is no loss of consciousness even if the onset be sudden. Many of these patients are attacked while at rest or during sleep, in which case they awake with the paralysis but with no knowledge of the onset. Jacksonian convulsions are often encountered in cases of cortical thrombosis and the convulsions tend to recur for several days with no disturbance of consciousness. In the large group of these cases which have the progressive onset there are numerous and varied prodromal symptoms. There are transient or persistent feelings of fullness, heaviness, formication, weakness or pain in face or extremities, with dragging of the leg or clumsiness in the finer movements. These symptoms are more marked during fatigue. Such symptom groups appear from time to time, lasting for a day or so, and then disappearing for weeks or months. They gradually become more severe, and permanent paralysis is eventually established. The paralysis may be established suddenly and completely or may advance gradually; a monoplegia becomes a hemiplegia, paralysis beginning in the foot gradually invades the whole lower extremity and finally the arm and face are involved, or if the thrombosis begins in the middle cerebral artery aphasia is first noticed, followed by paralysis of the lower facial muscles, the arm, and finally the leg. In such cases the thrombus is of the progressive type. In cases of softening the patient usually has a weak pulse, a pale face, shallow respiration, and the coma is slight, if present at all. All these conditions are those favored by weak heart action and low blood pressure.

The following case report is characteristic of hemiplegia of gradual onset following thrombosis of the middle cerebral artery. M. K., age 59, German, barber, alcohol and tobacco to excess. Father died at the age of 69 of left sided hemiplegia following the third stroke. Mother died of pneumonia at the age of 72. One brother had a stroke at the age of 76 and died seven days afterwards. One daughter had a slight stroke and recovered. No history or suspicion of syphilis in patient or family. Patient had typhoid 22 years before he became paralyzed, and has had "the grippe" several times. Otherwise he enjoyed good health. Stroke occurred when patient was 51 years old. Came on gradually over one month's time. Left side of face, left arm and leg were involved in the order named. There was no unconsciousness, speech disturbance, nor defect of sight or hearing. The condition now, eight years after the stroke, is characteristic of the hemiplegic state. Slight facial and marked arm and leg paralysis, contractures of arm and leg, exaggerated knee jerk and Babinski phenomenon are present.

In cases where brain tumor is the cause of hemiplegia we usually have a progressive onset of the paralysis, but it may be rather sudden, simulating hemorrhage as in one of my cases. The symptoms of intra-cranial pressure usually predominate, headache, projectile vomiting, choked disk, localized spasms, etc., with the paralysis gradually supervening in the extremity especially affected by the spasms.

In cases of paralysis resulting from gross injury, the cerebral insult is usually severe with deep and sudden coma and a sudden accession of paralysis in the extremity controlled by the injured brain area. At the other extreme are cases of injury as in a clean cut puncture like that made by a non-spreading bullet in which the general symptoms may be slight and the resulting damage limited to aphasia, blindness or a limited or partial paralysis.

The hemiplegic state includes a number of conditions which develop in all non-fatal cases of hemiplegia from any cause except a growing brain tumor. The amount of paralysis varies with the extent of the lesion from a monoplegia to a complete hemi-paralysis, and improvement is expected for several months in all cases although the rate and extent of improvement are variable. The tendency to improvement is more marked and the period of improvement longer in cases of hemorrhage than in cases of thrombosis, as the clot will continue to shrink and thus relieve pressure on adjacent structures, while in softening the destruction of tissue is more complete and a comparatively larger part of the paralysis is due to organic change rather than to functional interference as in hemorrhage. There is a greater tendency to improvement in progressive cases of softening than in those cases which have a sudden or apoplectic onset. At first there is a condition of flaccid paralysis with abolished or very weak reflexes. Gradually the reflexes become exaggerated and we find a transient stiffness and rigidity of muscles with ankle, and even rectus and wrist clonus, followed in a few months by contractures which are usually permanent, but which, on account of changes in the trophic centres of the cord may disappear after several years and atrophy of the muscles develops. In one of my cases marked contractures were present from the very beginning. The contractures are quite characteristic; the upper limb in which the flexors are stronger than the extensors has a flexor contracture while in the lower limb with stronger extensors an extensor contracture develops. Occasionally the reverse of the above condition is present. Of my cases 80 per cent had well marked contractures, and the remaining 20 per cent in which no contractures could be demonstrated were mostly cases seen early and before contractures had time to develop. Two cases showed the uncommon condition of extension of the arm and flexion of the leg. In nearly all cases the contractures were more marked in the arm than in the leg.

As regards the deep reflexes; the biceps and triceps reflexes were exaggerated in practically all cases. In six cases the knee jerk was reduced or absent, and in two of these cases the absence of knee jerk was due to limitation of motion. Seventy-eight per cent gave a positive Babinski on the paralyzed side and six per cent on the sound side. Seventy-eight per cent had ankle clonus on the paralyzed side, with twenty per cent on the sound side. Patellar clonus was present in only two cases and the Shattuck sign in about ten per cent of all cases. No record was made of the Gordon or Oppenheim phenomena, but they were quite inconstant. These records are of no particular interest except to show that the Babinski phenomenon is still the most important of the pathological reflexes showing pyramidal tract involvement, as it comes early and is the most constant. Occasionally exaggerated reflexes and contractures may develop on the sound side.

Circulatory disturbances including cyanosis, sweating, coldness, edema and epithelial changes, are usually present to a greater or less degree. Athetoid and associated movements often develop and give the patient false hope of returning function.

Mirror writing is an interesting phenomenon which is occasionally observed when the paralysis affects the arm and hand used in writing. I had one case of mirror writing in a right handed, right sided hemiplegic. This patient also had a complete anarthria and a marked lack of emotional control.

Sensory disturbances are often found, and these more often in the cases of cerebral softening. They vary from simple blunting of all sensations to complicated sensory defects as found in thalamic lesions. The extent and nature of the sensory disturbance depending of course on the location of the lesion and the extent of involvement of sensory areas or tracts. Of my cases eleven out of fifty showed permanent sensory disturbance, and six gave a history of temporary sensory defect. Two were doubtful and thirty-two gave no history of sensory involvement.

Hemianopsia was present in two cases directly after the stroke, but was not permanent in any.

Diplopia is a fairly common prodromal symptom, being present in eleven cases, six of which were syphilitic, and in all the paralysis was due to cerebral softening. The diplopia persisted in only two cases. In seven other cases no history was obtainable. I believe transient diplopia to be an important indication of arterial brain disease, especially of syphilitic origin, and a good indicator of subsequent paralysis.

Pupillary changes, irregularities in size, shape and reaction are also common, especially in the syphilitic cases.

Disturbances of hearing are rare. One case had a slight nerve deafness continuing after two years and one case gave a history of

deafness for one day after the stroke. All other cases were negative in this respect.

Aphasia in its various forms and modifications may be commonly expected. Sixty per cent of my cases showed speech defects of this kind, thirty-six per cent of which were permanent, and these figures are lower than those of some other observers.

Lack of emotional control with a tendency to uncontrollable laughter and crying was found in twenty-two per cent of cases examined, and other mental symptoms were rare except in the acute cases.

Acute bedsores, rapid emaciation or fattening as well as temporary albuminuria and glycosuria due probably to involvement of the medullary nuclei are occasionally encountered. Acute hypertrophic neuritis and acute arthritis are encountered early and ankylosis of joints and arthropathies similar to those of tabes are later findings.

There are also many post hemiplegic motor complications; intention tremor, choreic, ataxic and athetoid movements, conditions occurring when the paralysis is not complete and implying some irritative lesion in the cortex or along the upper motor neuron especially in the thalamic region or internal capsule.

In the active treatment of brain hemorrhage, rest, quieting of a too active heart and lowering of blood pressure by means of suitable drugs, mechanical means and blood letting are the essentials, and these should be employed early to be of much advantage. In thrombosis stimulating measures should usually be employed to better the circulation. Subsequent treatment in either case consists in attention to the general condition, bowels and bladder in particular, electricity, massage, and active and passive movements to prevent as far as possible contractures and to keep up the nutrition and strength of the muscles.

Prophylactic treatment pointing toward the prevention of arterial disease and high blood pressure is of greater importance than the active treatment, which, under the most favorable conditions, is usually a life saving measure, and leaves so many helpless and hopeless cripples. A bland diet and suitable occupation and recreation; abstinence from alcohol, tea and coffee; early and persistent treatment of syphilis; early recognition and treatment of renal disease and arteriosclerosis are the important things. In this connection is shown the importance of routine examinations at frequent intervals of all people past middle life, especially the urinary and blood pressure tests. No examination should be considered complete without the blood pressure findings with a good instrument, and I believe that this test will give us earlier and more dependable warning of the danger from cerebral hemorrhage than all others. It is trite but true that a man is as old as his arteries.

Discussion.

Dr. R. A. Weston: This paper is especially interesting to me from the specific condition being an underlying factor in a great many of these conditions, and it is especially interesting in regard to the prognosis in these cases. While there is quite a difference between hemiplegia due to syphilis and hemiplegia due to some other factor, hemiplegia coming on with unconsciousness in syphilis can quite often be relieved by proper treatment, provided it is not immediately fatal. If it is not immediately fatal and the prognosis in these cases is much better than in gradually progressing cases where you get an arteritis and a specific cerebral softening progressing gradually. These are the cases where the prognosis must be very guarded, especially where the individual has no other lesions of the nervous system in any way. I have seen them with no lesions of the knee, or with no lesions in any portion of the nervous system, or eye—everything normal apparently, but in all the most acute conditions of the disease, apparently under the most rigid treatment, producing so-called Jacksonian epileptic attacks. When these come on, the individual for three or four days is apparently much worse. He then apparently recovers very rapidly, and unless you are accustomed to seeing these cases you are very likely to give a favorable prognosis. These lesions are due in about eight out of ten per cent of the cases to specific arteritis.

The other type of cases is where there is some specific tumor in the region of the Pons. These, if not immediately fatal, are of the most serious type, from the fact that being so near the locomotor center they produce symptoms which the individual very rarely recovers from, and if he does recover from them there is a certain amount of nervous degeneration, so to speak, either from pressure extending over a length of time, or from degeneration from the presence of this tumor in some portion of the nervous tract. This may deflect the nerve, and by causing it to press against a bony prominence may cause an atrophy which cannot be restored. There are, as I say, the most serious types of cases.

So that in specific cases the acute attack coming on very suddenly with coma are the most favorable under ordinary treatment, if they are not immediately fatal; and these others which are apparently not grave, with no cerebral lesions apparently, are the ones that quite often fool us and go on to a very sad termination, to either cerebral softening or specific arteritis which terminates in total loss of the mental faculties.

Dr. G. N. Ryan: It is interesting not only to the specialist, but to the general practitioner, and in speaking of prophylaxis I am sure the essayist hit the nail on the head when he spoke of the importance of checking up laboratory findings with physical findings, and especially in our routine work in giving a good deal of consideration to the blood pressure. I had three cases under observation lately where the blood pressure showed 240 to 270, where I have prognosed hemorrhage of the brain if there was not due precaution taken, and put them on treatment in these various cases. And upon some exertion in one case where a man showed a blood pressure of 270 just a week before he had hemorrhage of the brain; upon undue physical exertion, lifting around his barn, he fell, and it was impossible for him to get into his home without aid. Just the week before that I had cautioned him about lifting, or about violent exercise, and I am sure he appreciated the advice. It has been my experience that we give too little care to making careful laboratory tests as to differentiation clear through the blood analysis, urinalysis, as well as blood pressure. One case I remember of the urinalysis showed absolutely normal, the blood pressure 160. With repeated examinations of the urine inside of a week we brought a number, in fact a shower of casts, and placed the patient on treatment, and within a couple of months the blood pressure came down.

Dr. J. W. Osborn: I was attracted to the part of the paper—although I did not quite catch all he said—about the hemiplegic who has convulsive seizures. I recently saw a patient whose attack was of that type. He, for three or four days before his attack, had been complaining of progressively increasing weakness, and the day of the attack the daughter found him lying on the floor, with some convulsive seizures on the right side of the body, notably the right hand. Shortly after I saw him, when we had got him lifted into bed, he had a very marked convulsion. He was unconscious all this time—that is, he would do anything we told him to do, but he remembered nothing about it. His unconsciousness lasted a few hours,

and when he became conscious he was paralyzed on the right side of his body, which was very transitory, and now he is up and around, having had one slighter attack since then. I would like Dr. Doolittle to tell me what the ultimate prognosis of this case will be. He is a man 78 years old.

The President: I should like to ask you a question. If you can in closing the discussion give us something in regard to the blood pressure, the relation of the blood pressure with regard to the prognosis as to when we might expect, reasonably, an apoplectic seizure, if there is any way. Of course I understand well enough that you cannot foretell with any precision; but is there any fixed table, or is there any law, or have we any statistics that will enable you to know in a percentage of cases when we might expect at certain ages and certain blood pressures a seizure? You know in the last year or two it has become very fashionable to take blood pressures, so that there should be something worked out with regard to that. I ask for this information because I have either been too indolent, or else have not come across any list or statistics that enabled me to get at any information that I could work out anything satisfactory in my mind. I get blood pressures from 250 down to nothing, and really I never know when to tell them they are going to have an attack of apoplexy, or I ought to bleed them. I have been in the habit of telling them when it is above 200, just on general principles saying a few things to scare them, but I haven't been able to succeed. Another thing, I see frequently and I have reported to me in insurance work, deaths from apoplexy under 55 years of age, occasionally under fifty. I am unable to make myself believe that those cases are not always syphilitic cases, and yet I have no statistics in regard to that. I only have a suspicion. I would like to have you answer that doctor, if you can, and tell me whether in these very young persons having apoplexy, they are not in a very large percentage, if not always, due to a syphilitic condition. I would like to catch some fellow, you know, that is wanting his insurance money that has lied about it when he got his policy.

Dr. T. F. Duhigg: I would like to ask a question also, and that is the effect of the hemiplegic state which results from injuries to people under twenty years of age. There are men who have lived thirty or forty years with a hemiplegic condition as the result of injury when he was a child. I would just like to know what effect a lesion of the brain severe enough to cause the hemiplegic state has on the duration of life, a man in a good safe occupation.

Dr. R. C. Doolittle: In regard to the case Dr. Osborn spoke of, it is evidently caused from thrombosis of the middle cerebral artery in the cortical region. Being of gradual onset, the prognosis is not as good as if he had more or less sudden symptoms; the prodromal symptoms indicating that it was a progressive onset. The question of recovery is really a comparative one, but we would not expect as good a prognosis in this case as if it had been more sudden, and without the feeling of weakness, etc. first.

Now in regard to Dr. Smouse's question. There is no very definite rule as to when the blood pressure is high enough to be dangerous, but there are two rules that are followed. One is; the normal blood pressure of a person past middle age is 100 plus the age, and a person of 75 could have a blood pressure of 175 without being in the danger period. Another one is that, taking a normal blood pressure between 120 and 130, to add half of a millimeter for each year, and then when that is determined, a variation of 10 mm. either way is considered normal. Of course blood pressure alone would have to be very high to produce hemorrhage through a healthy vessel. You could have a very high blood pressure and a bad kidney lesion without much endarteritis in the brain, and then the blood pressure could go over a hundred quite a ways without causing hemorrhage. If there was a condition of disease in the cerebral vessel a very much lower blood pressure would cause hemorrhage. So I cannot see how we can figure out definitely what is the danger point in each case. Only in a general way can we do that.

In regard to the men under fifty who have hemorrhages, I would put the age a little lower and say that in adults up to the age of forty, it is nearly always a case of syphilis when there is apoplexy.

In answer to Dr. Duhigg's question, the prognosis for life is good unless there is a very bad condition of the brain and arteries, because when a person has a stroke that takes him out of active life, he is usually very careful of himself and cannot indulge in strenuous physical work. He has had a long siege with the doctor and he has found out a lot of things about

taking care of himself, and had advice about the bowels, diet, and so on, and with him the prognosis is good.

One case I had was a woman of about 70 years of age who had had an attack of apoplexy when she was six months old, and while she was partially crippled—she had very little use of the hand and just enough of the leg so that she could walk—she had been healthy and strong all her life. She was a servant and worked around in various families, and the condition of her arm and leg had remained practically the same as it was directly after the injury, except that it had grown some. It had not grown as much as the other one. So I think the prognosis for life, provided there is not another stroke, is very good in practically all these cases.

The President: Doctor, one other question. Is there any explanation as to why these hemiplegic attacks come on during the sleeping hours, at night, so frequently in the aged person, and if the blood pressure has anything to do with it, isn't the blood pressure supposed to be lower at that time than it is during the waking hours?

Dr. Doolittle: That is my idea, yes. Possibly the position of the body may affect it. The circulatory apparatus is quieter. I don't know of any other conditions.

The President: There has never been any explanation given for that?

Dr. Doolittle: Except that the blood pressure is a little lower during sleep, and possibly the head being in a lower position has something to do with it also.

THE PATHOLOGY OF GONORRHEA*

J. W. SHUMAN, M. D., Sioux City.

The exciting cause of the disease is the gonococcus, found in the discharge secreted by the sickened mucous membrane of the anterior urethra; it is a diplococcus and stains gram-negative; is found intra- and extra cellular, the finding it intra-cellular being diagnostic, as it is primarily the pus producing organism.

There are present all the signs and symptoms of inflammation viz; redness, heat, swelling, pain, and inhibited function; the discharge is at first muco-purulent, soon varies, this dependent upon the mixed type of bacteria that gain their entrance through the damaged mucous membrane; that is, organisms that were harmless as long as the mucous membrane was intact; therefore the main role of the gonococcus as a propagator of disease is the breaking down of the wall of defense and letting into the system other more virulent organisms.

The lesion is at first confined to the anterior portion of the urethra, and this acute inflammation is oftentimes a beneficent process, and there are times when the anterior urethra should be left alone.

The inflammatory process either heals with little or much cicatrix dependent upon the damage done, or as it most often does, extends by continuity to the mid and posterior urethra, etc. etc., augmented by the pressure from without in the form of irrigators, syringes, sounds, medicated bougies, etc.

As acute complications, we can expect inflammation to take place in the adnexia, such as orchitis, epididymitis, cystitis, prostatitis, vesiculitis, etc; this you will please note by an extension along

*Read before the Appanoose County Society, Dec. 1912.

the mucous membrane, and not by the blood or the lymphatic channels. In this connection, it may be well to state that no plausible reason can be cited for the coincident suppression of the urethral discharge in the majority of cases when an orchitis or epididymitis develops.

Of other complications by contact, we have ophthalmitis due to ignorance and uncleanness of the patient, or by accident or willfulness to the innocent. That all gonorrhea patients do not suffer ophthalmitis is no credit to them, but is due to the fact that the organisms cannot live in the open air, but die on the fingers before they rub their eyes.

The complication transmitted by the lymphatics most often encountered is the adenitis (inguinal) observed in those patients with elongated prepuces, under which collect the excreta of the glands around the corona and the discharge from the meatus containing the mixed organisms—uncleanliness—which in turn are absorbed by the lymphatics of the penis, filtered out by the glands, hence the inflammation of the glands not unlike the sympathetic bubo of the chancre.

We have now left to consider the metastatic involvement, that is by septicemia, and under that head are many, carditis, nephritis, and peritonitis, not a few; but the joint complication is the one met with most frequent and demands our attention both from its severity and liability. It is a process due to septicemia,—the organisms plus their toxins gain entrance to the blood stream through the injured urethral mucous membrane and find lodgement in and about the serous cavity of the joint; be they of the strepto, pneumo, or staphylococcal groups; which is only conclusively determined by accurate blood and serum culture and microscopic examination.

As to the exciting organisms in the joint, it is not sufficient evidence to merely state that “*post hoc, propter hoc*”, or in other words that because the patient has suffered from a specific urethritis (gonorrhea) that the exciting germ in the joint is a gonococcus.

Not all the arthritides we meet with in these patients are monoarticular in type; nor again, is the inflammation confined to the large joints. You say these two assertions have taken away the highly diagnostic features of gonorrheal rheumatism. I grant you are right if you are referring me to the text books of six years ago. The signs and symptoms of the specific arthritis are those of a septic joint following upon a history of urethritis, that yielded definite gonococci per culture and stain.

With this data at hand, you have something to work upon; then work out the blood with cultures, also the joint fluid, and until you have succeeded in isolating the organism or organisms causing the trouble in the joint, your diagnosis is only problematical and your treatment empirical. What I have hinted at, I will now state: that

the microscope alone is inefficient and must be taken in conjunction with cultures; for a long time the organism of gonorrhea was difficult to grow artificially, but with the following media,

| | | |
|---------------------|--------|---------|
| Sterile urine | 1 pt. | } 1 pt. |
| Glucose agar | 4 pts. | |
| Blood agar | 1 pt. | } 4 pt. |

it can be grown.

The term "once gonorrhea, always gonorrhea", is most surely the slogan of the quitter M. D. It is just as plausible to speak of "once typhoid, always typhoid", if you insist on putting gonorrhea in the class of latent diseases.

This brings to the study of latentized gonorrhea, or the attenuated type; for example: the once virulent organism due to repeated attacks of "antibodies" deteriorates into an inoffensive broken down cocci unable to inflict bodily injury upon its host as long as his resistance, that is antibodies or opsonic index is above par, if this organism can find lodgement in a nice new, clean field, e.g. a previously uninfected vagina, *mirabula dictu*: it will then thrive and flourish turning out an army of pathogenic cocci vastly stronger and more virulent than their predecessors, which in turn will reinfect the donor of the broken down organism if the occasion permits.

This theory, of latentized gonorrhea is purely conjectural and the flaws in it numerous. That all genito-urinary patients are liars is indisputable, and if you start with that as a premise, your deductions will not be so far off. You would first want to be sure that the male had not secured his 'reinfection' (for one attack does not carry with it immunity) elsewhere than from his wife; also you would wish to know if the wife had received her infection from her mate's attenuated strain, etc., all of which cannot be determined merely by a cross examination.

Of the chronic manifestations of the disease we can safely estimate that 75 per cent lie in the prostate of the male, and an equal percent in the Fallopian tubes of the female.

We as physicians, are responsible for the large list of innocently infected wives and babies, for the reason that we do not thoroughly treat the disease and its complications in the male.

When acute gonorrhea is recognized and treated more as a pathological condition and less as a social evil, it will then take a place among the curable diseases, and not rank above the colon bacillus as a disseminator of death and destruction. We should urge our brothers to handle the unfortunate sufferer in a scientifically sympathetic and dignified manner, that in turn the patient will early seek medical advice and stick to it until cured instead of holding "drug store conferences" and using some "big G remedy", with the long list of complications and sequelae as a finale.

The pathologic anatomy of strictures, the end product of inflam-

mation in the urethra, is fairly well understood and needs but passing mention.

Your president especially requested a discussion of the different strains of gonococci, and the serum and the vaccine treatment.

Let it first be stated that no two individuals are alike, although akin, and each individual will evidence the characteristics he is possessed of, so that the type or types of organisms will vary materially, e. g; if an individual suffering from systemic tuberculosis receives a gonorrheal infection, that infection finding a minus resistance, should in all probability rear a race of organisms highly virulent and vice versa. So that we might go on ad infinitum with the theory of strains or different families and strength of the Neisserian group.

The strain is one of the difficulties that confronts the serum and vaccine treatment—for obvious reasons.

Let us hope that the empiricism of treatment which has so long dominated this so well known clinical disorder will be relegated to the limbo of the shades of the should-be-forgotten, and the new methods which have been introduced will be used with greater results.

There is a wide variance of opinion among clinicians as to the value of the serum and vaccine or bacterin treatment, but all are united in the belief that it is a step in the right direction.

The vaccine or bacterin is prepared from seven to ten strains of virulent cultures of gonococcus grown on artificial media, (the stock vaccines gives better results than the autogenous, due to the fact that they are more reliable), and sterilized at 60° C for an hour suspended in physiologic salt solution with a preservative, the vials labeled for use. With this a definite dosage can be administered, the negative phase (a decrease of the resistance), and the positive phase (an increase of resistance) determined.

One thing we can say positively, and that is, that we should get away from the doses on the vials. I mean we should individualize our doses. 50,000,000 dead bacillus may be too little or too much for one individual; these are things the clinician must determine for himself. Also as to the time for the next dose and when to leave off giving.

The serum which is produced by injecting an uncastrated ram with living and dead gonococcus, afterwards taking the serum from the blood, contains a product called antibody-precipitin, (also called by other names), is not an antitoxin but a bactericidal substance.

There is no reason for not using the serum and vaccine at the same time in connection with gonorrheal cases.

A mixed vaccine is a vaccine which contains two or more varieties of bacteria and their substances, i.e., to have present in the vaccine the various species generally found in a mixed infection.

The mixed vaccines for chronic gonorrhea (and it is chronic af-

ter the second or third week) contains the gonococcus, streptococci, staphylococcus, colon and other forms of bacillus found most often in those case of chronic urethritis and prostatitis (gleet).

In conclusion, chronic urethral inflammation is not a simple or a specific infection; it is a complexity of diseases, if you will permit the term, and when we are able as diagnosticians to accurately diagnose the type or types of the organisms at work and give the patient the accurate dosage of the vaccine of the specific organisms at the correct intervals, "once gonorrhea" will not be "always gonorrhea".

PNEUMONIA IN CHILDREN*

FRANK M. FULLER, A. M., M. D., Keokuk.

If the caption of this paper had been simply pneumonia, one would be put hard to find enough that was not already familiar to a body of progressive physicians. Pneumonia in children develops in such different forms and each of these forms is constantly showing some new manifestation. So it may be possible to call your attention to a few points which may aid us all in our work.

Unfortunately in medical colleges we learn chiefly to interpret the clinical evidences of disease as they are shown to us in the adult.

The man who clings to that knowledge when he is called on to treat children soon joins that band which excuse their ignorance by the popular saying that "it is hard to tell what is the matter with a child."

It is always hard to tell what is the matter with a child, as it is an adult, if one is not conscientious enough to make a thorough, careful, and repeated examination, and earnest enough to learn how to correctly interpret and judge the evidence attained.

In pneumonia in children we sometimes have the problem given us and like some old arithmetics, the answer is written on the same page. In other cases the answer is to be, with difficulty, found and proven, and in others the problem is solved only in the p.m. edition.

In those instances of lobar pneumonia in older children where the type approaches that of the adult and we are called to hear evidence of sudden onset in health, high temperature, rapid pulse and respiration, quickly developing physical signs of well known character, one needs not look far for the answer to his diagnostic query.

Unfortunately clinical evidence in children cannot always be given by the patient but must be wholly elicited by the patients medical attorney. We have a case where the initial symptoms show apparently only involvement of the intestinal tract as indicated by

*Read before the 42nd Annual meeting of the Des Moines Valley Medical Society, Ottumwa, 1913.

vomiting, diarrhea, or convulsions, or of the meninges by stiffness of nucha, dullness, apathy, delirium, etc., or a case may show all evidence of pneumonia involvement and yet clear up entirely in seventy-two hours.

Then our answer must be found by us. Upon our skill in judging evidence and our patience in searching for it will depend the welfare of the patient and incidentally, our reputation. I will not attempt in this paper to consider the disease in its typical and easily recognized manifestations, but will endeavor to call attention to some of the symptoms, and their interpretation, which will help to solve a perplexing problem.

We will consider first the methods of gathering evidence which are necessarily peculiar to children with pneumonia. In percussion a child must not be in a strained position, that is, bent to one side, otherwise you get a greater amount of dullness on the convexed side. If the muscles are contracted by resistance or pain, dullness is likely to show over the muscle.

In making percussion the character of the stroke is important. If you percuss with a dull heavy stroke during inspiration and expiration you get nothing but dullness in a child. Short, quick strokes and usually very light during inspiration only gives the true note. In auscultation do not use a phonendoscope in infants and small children. In broncho pneumonia it is useless as it covers so much of lung area when often only a small portion is diseased that the information is worth nothing. The back should be examined carefully in all cases as no signs will appear in infants in front, first on account of the pathology and second because the thymus occupies so much of the anterior thorax.

If a child cries it is a great aid as only in forced breathing are bronchophony, murmurs and vocal fremitus shown. Do not forget that puerile breathing sounds like bronchial breathing but is heard only on inspiration.

In pneumonia it is better to observe the child first when asleep, then gently awakened and when there is doubt of the diagnosis the best information can be obtained if you are observing and patient while the child cries.

In that form of pneumonia where pain is expected, that is, lobar pneumonia it is often absent in children. In older children it is seldom, if ever, referred to the thorax till 2nd or 3rd day of disease, but almost invariably to the abdomen. Many a diagnosis of intestinal disease or appendicitis has been made from high temperature, vomiting, and abdominal pain caused by a lesion of pneumonia. In pain of this character there is no abdominal tenderness. In both forms of pneumonia it is necessary always to make repeated examinations of the chest to determine the conditions present.

In labor pneumonia which is comparatively infrequent but actually often present in infancy and which is the ordinary form in

children after six years of age, the diagnosis is generally not difficult. In all children there is a rapid onset with high temperature. There is usually no evidence of preceeding bronchitic or other disease if the pneumonia is primary. If secondary, the predisposing disease may mask the onset but does not obscure it from a careful observer. Vomiting is very common, and when it arises in summer there is commonly a diarrhea. One must be careful to find the cause of every summer diarrhea with continued high fever and this means a careful examination of the lungs in every instance.

The diarrhea with abdominal pain in infancy in summer must always be carefully scrutinized.

The respiration must be carefully observed. In infants and younger children fever always increases respiration especially if accompanied by gas in abdomen. In lobar pneumonia the respiration is not only increased but is changed in character. The respiratory pause which normally comes between expiration and inspiration is abolished and the expiration immediately follows inspiration and is generally accompanied by a grunt or moan. This expiratory grunt is not observed always when the child is asleep or quiet but quickly comes when the patient is disturbed. The rate of respiration is quickened and changes in relation to the pulse from one to four to one to two and a half or two. Prostration generally comes early. The cough is slight or absent in the beginning. Mothers will often doubt a diagnosis because there is no cough. The physical signs may at first be quite indistinct and an inexperienced observer may diagnose anything but pneumonia.

A careful examination will show however the beginning signs of consolidation a slightly tympanitic note, lessened respiratory murmur, bronchophony and bronchial breathing.

It must be constantly remembered however that children, when quiet will not breathe deeply and auscultation must be repeated under conditions of rest and excitement in order to get the true sounds.

After consolidation one is guided not only by the dullness but by the increased resonance elsewhere.

The dullness rapidly develops in pneumonia; it involves practically the whole of the lobe while in pleurisy dullness shows first in the lower border behind and extends slowly upward before it can be detected in front, and the upper border in front is always lower than it is posteriorly.

It must not be forgotten that a pneumonia in children is often centrally located or is high in the axilla and may involve only the upper lobes in front just under the clavicle.

In central pneumonia dullness is often absent and bronchophony the only sign. In anterior consolidation high up the bronchial breathing is best heard in the back over the scapular spines.

In general, bronchophony is often more reliable in outlining a pneumonia than is percussion.

Not infrequently at the onset the cerebral symptoms are so prominent as to obscure the pulmonary, and one is tempted to diagnose meningitis. If, however, the nervous symptoms, vomiting, convulsions, stupor, stiffness of neck, or even opisthotonus, are pronounced in the beginning and after the first day or two begin to subside meningitis is probably not present, but if the conditions named slowly advance and persist or develop after the first onset, and the respiration becomes slower than pneumonia can, in all probability, be excluded.

The type which is characterized by the so-called typhoid state can generally be recognized by the chill and physical signs.

In older children the prognosis of lobar pneumonia is almost uniformly good. In no disease with such violent symptoms does recovery so often occur. In younger children and especially those with rachitis or bad nutrition the prognosis is graver on account of the lessened nutrition. The treatment will be very lightly touched on. I will only say that the more experience I have with lobar pneumonia the more I am convinced that the treatment should be very simple and directed only to guiding the child off the reefs.

Baths ranging from hot, 104 to 106, through tepid to cool are the best means to combat temperature.

The tendency at times to circulatory congestion is best met with rapid cool sponging followed by friction. A failing heart should be recognized before it fails. The best guide is an indistinct first sound.

Mild stimulants—with caffeine, camphor and, if indicated, digitalis are the safest weapons. It is always better to guard a heart or the respiration against failure than to get busy trying to support a function that is already going. The nurse should know or should be instructed how to meet the emergencies which are likely to arise at the time of crisis, and should be prepared for sudden cyanosis or collapse.

There is a form of pneumonia which goes under many aliases: Broncho pneumonia, capillary bronchitis, bronchiolitis, lobular pneumonia.

Of all the names broncho pneumonia is probably most correct, for although a pneumonic process cannot always be recognized clinically yet in almost every case a post mortem reveals the involvement of lung tissue.

Some authors question whether this is a disease or a combination of diseases. I don't care especially about that, I know there is something by that name that causes us a lot of thought and anxiety and sorrow.

It truly manifests itself in a multitude of ways. It is hard to recognize because it has no definite course as has lobar pneumonia.

Most commonly it is secondary to some other disease generally bronchitis, although it is always imminent in the infectious disease which involve the mucous membranes such as measles and pertussus.

Unlike lobar pneumonia it is almost invariably preceded by symptoms of catarrh of the smaller bronchi.

Of the causes first is the predisposing age. Almost all cases being under two years. Lowered nutrition from any cause favors the onset. The active cause is in most cases the pneumococcus, although in cases following the infections the pus cocci are more prevalent. The catarrhal condition and low nutrition merely give the pathogenic germs their favorable opportunity.

The onset is gradual or sudden, more often the former. The temperature may be high or only a trifle above normal. The cough is variable and so is almost every symptom.

The chief point in making a diagnosis is a marked change in most all the symptoms in an ordinary bronchitis in the infant. Unlike lobar pneumonia the temperature is subject to great variations and while it is never intermittent the remissions may be over a range of four or five degrees.

In children of low nutrition the temperature is almost always low and the disease is dangerous. Broncho pneumonia almost always shows the first signs in physical examination in the back, generally low down close to the spine and bilaterally.

The early evidences are alone by auscultation. Percussion to a well trained observer may show a slight hyperresonance but one cannot be sure of this because the physical conditions of the infants thorax may lead to very deceptive sounds.

On auscultation there is first an increase of coarse moist rales over limited area, followed in a short time by a fine whistling rale which is heard both on inspiration and expiration but is not a true bronchial breathing. These dry rales are quickly replaced in turn by very fine moist rales, confined at first to the lower back generally, but rapidly extending over areas in both lungs. In the center of these moist areas a trained ear may hear bronchial breathing but a more distinct note is bronchophony. A very light, quickly applied percussion at time of inspiration may elicit dullness over the areas of bronchophony. Vocal fremitus may also be increased during crying over the areas of consolidation.

The respiration may be irregular and varies with the pulse but the pulse respiratory ratio is always changed. The dyspnea is generally more marked than in lobar pneumonia and is in proportion to the bronchitis present.

On account of the dyspnea there is much greater danger of circulatory disturbance than in lobar pneumonia. The cyanosis is generally shown in the lips and nails but there may be edema of hands, face or feet, distention, dilation, and fatty degeneration of the heart.

There is greater danger from heart failure as well as respiratory failure in broncho than in lobar pneumonia, and where it is secondary to infectious diseases, especially measles, the danger is increased.

In epidemic grippe the only evidence of the disease in an infant is the broncho pneumonia which complicates the unrecognized disease. There may be in these grippe cases a croupous with a broncho pneumonia supervening.

In the midst of a broncho pneumonia always look to the ears, for an otitis media is a common complication and may be the cause of a sudden high temperature, perforation and death. The prognosis is very uncertain. Early in life fully half the cases will die, more especially if not given exact care. Possibly in private practice the mortality is not so high.

In treatment much more can be done to alter the course of the disease than in lobar pneumonia.

Clean, light, quiet rooms, an abundance of fresh air is essential. The air should be always moist in the vicinity of the patient.

Hot wet compresses to the chest and temperature baths relieve restlessness and temperature.

For years I have had uniformly good success with an agent with I have never seen mentioned in any text book but which I noted while working in a chemical laboratory. That is the bronchorheic influence of sublimed ammonium chloride.

Under a tent where the air is moist with a croup kettle I volatilize twenty to thirty grains of powdered ammonium chloride by dropping it on a red hot wood coal, held on a hand shovel or burned on a hot tin plate over a strong alcohol flame.

While this is not always effective I have seen almost wonderful relief afforded now in so many cases that I recommend it to you.

I believe too, in the efficiency of the mustard pack, cloths wrung out in hot mustard water and applied all over the body to the point of redness.

Stimulents should be given easily and continued through the disease.

In long illness the use of digitalis is often indicated and the careful therapist will find it useful. The nutrition should be watched from the beginning. A breast fed baby has a great advantage but in artificial feeding avoid foods that produce gas as intestinal complications are frequent.

A good digestion is of far more value than much medication.

The forms of pneumonia known as interstitial or chronic pneumonia, that caused by tuberculosis I will not attempt to consider.

THE TREATMENT OF ATROPHIC RHINITIS*

FRED W. BAILEY, M. S., M. D., Cedar Rapids.

Upon consulting various textbooks on rhinology there is to be found at least thirty synonyms of atrophic rhinitis. The most commonly used synonyms are chronic dry rhinitis, muco-purulent rhinitis and ozena.

The etiology of this disease has been for many years undetermined, but modern laboratory equipments, improved diagnostic methods, knowledge of bacteria, and a more thorough study of the subject have at the present time brought forth several feasible theories as to the cause of atrophic rhinitis.

The etiology of atrophic rhinitis as given in the most modern texts is briefly as follows.

1. Simple atrophy due to some latent tubercular, syphilitic, or scrofulous taint in the blood and not due to any pre-existing inflammatory condition in the nasal membranes themselves.

2. Atrophy due to degeneration following pressure of hypertrophied turbinates against the nasal septum, spurs or deviated or deflected septum.

3. Atrophy secondary to engorged blood vessels of the nasal mucosa due to heart disease.

4. Atrophy and sclerosis due to preexisting suppuration of the accessory nasal sinuses.

5. Atrophy following a too radical sacrifice of the nasal mucus membrane in operation upon the turbinate bones. This is known as the post operative atrophic rhinitis of Frankel.

Atrophic rhinitis is a disease almost entirely limited to adolescence. It is very rarely found beginning before the age of twelve or after the age of twenty five. Females are more predisposed to the disease than males.

The symptoms of the disease may vary in severity from a slightly widened nasal cavity with thin, smooth and faded mucus membranes with a slight thick mucus secretion with a faint odor, to a wide nasal cavity filled with thick greenish muco-purulent crusts with a stench which is unbearable to say the least. Most patients with this disease are anemic.

The diagnosis is in most cases simple and is made from the objective symptoms.

The treatment of atrophic rhinitis has always been the bugbear of the rhinologist and it is the treatment of this disease that this paper is chiefly to discuss. I have made use of the circular letter plan in

*Read before the Iowa State Medical Society, Des Moines, 1913.

getting material for this paper. I prepared a list of questions as follows.

To Dr. _____

I am preparing a paper on

The Treatment of Atrophic Rhinitis

I will consider it a favor if you would answer the questions below and mail to me at an early date. I will of course quote no one unless by request:

1. What do you consider the most effective medical treatment for atrophic rhinitis?
2. How often do you administer the above treatment?
3. Are your cases cured or only benefitted by the above treatment?
4. What surgical procedures have you used for atrophic rhinitis?
5. Are the cases treated surgically cured, or only benefitted?
6. Have you tried treating atrophic rhinitis with autogenous vaccines or anything similar?
7. What results have you obtained by your treatment described under No. 6?
8. Remarks_____

I sent out one of these question sheets with stamped return envelope to about seven hundred and fifty rhinologists including all the prominent men in the United States and Canada doing work in this field. I have up to the time of writing received about three hundred replies.

Answers to question number one, (What do you consider the most effective medical treatment for atrophic rhinitis?), brought forth exactly forty eight separate medical treatments for the disease in question. The question was answered by almost all who returned the sheet. Out of all the answers 5 percent expressed the opinion that there "was no most effective treatment for atrophic rhinitis". Nineteen percent favored local applications of ichthyol with glycerine or water in strength varying from 5 percent to 20 percent. Eighteen percent used iodine either nascent or with glycerin or in the form of Lugol's solution. Thirteen percent favored silver nitrate in strengths varying from one to 20 percent. Four percent favored permanganate of potash solution used as a nasal douche. The remaining answers were of wide variation including among others, sea salt douches, ultra violet rays, dionin 5 percent, radium rays, negative galvanism, high frequency current, Beck's paste, kerosene oil, oil of mustard, etc.

Answers to question number two, (How often do you administer the above treatment?), were almost without exception the same, namely that the treatment should be administered either by the phy-

sician in charge or by the patient himself often enough to keep the nasal cavities free from crust formation.

Answer to question number three, (Are your cases cured or only benefited by the above treatment?), showed that 229 out of 251 rhinologists believed that their cases treated medically are only benefitted. The remaining 22 report cures as follows. Four report cases cured by application of silver nitrate solutions; one reports cure by using nasal douches of permanganate of potash; two report cures with Lugol's solution; one reports cases cured with argyrol solutions; five report cures with iodine solutions; one reports cures with radium rays; one reports cures with 1-500 formalin solution; and one reports that 75 percent of his cases of atrophic rhinitis were cured with thigonal providing the cases treated were children. I will leave comment upon the above to those who may care to discuss this paper.

Question number four, (What surgical procedure have you used for atrophic rhinitis?), brought forth that some think that surgical procedures should not be employed in the treatment of this disease, many that they had never tried any surgical procedure for atrophic rhinitis, and 152 reported that they had employed surgical measures. The answers of these 152 were as follows:—101 had operated upon the ethmoid, sphenoid, maxillary or frontal sinus if they were involved; 44 had used paraffin injections in the tissues of the septum or the turbinates with the purpose of narrowing the lumen of the nasal fosse. Three had used the Asche's or Freer operation for deviated septum; one had resorted to transplantation of epithelial tissue to the diseased parts; one had used skin grafts to cover diseased areas; one applied hot air to the exposed sinuses; one removed the middle turbinates; and one used cupric electrolysis. It is thus very evident that operation upon the sinuses is by far the most popular operative procedure for atrophic rhinitis, with injections of paraffin second in favor. Many are of the opinion that chronic infection of the various sinuses is responsible for all cases of atrophic rhinitis. One prominent rhinologist remarked upon this as follows:—"It has seemed to me that the etiology of atrophic rhinitis is much simpler than usually given, that is, it is often or usually a sinusitis beginning in childhood before the cavities and bones of the face are fully developed and the bones and cavities are modified in the development and consequently they atrophy, blood supply is diminished" etc. Another remarks, "From my remarks above you will see that I consider atrophic rhinitis as one of the sequelae of chronic empyema of the accessory sinuses. Am unable to see how any medical treatment or vaccines can be of any benefit. Get after the cause, (the diseased sinuses), and the atrophic rhinitis will take care of itself."

Those who have used nasal paraffin injection seem only moderate-

ly enthusiastic. Some use the hard and others use the soft paraffin, others use strips of hard paraffin placed under the mucus membrane elevated from the septum.

Answers to question number five ; (Are the cases treated surgically cured or only benefitted?) Of the 44 who employed paraffin injection, 40 reported that the condition was benefitted, two reported cures, and two reported no benefit. Of the 101 who had performed sinus operation for atrophic rhinitis, 86 reported their cases only benefitted and 15 reported their cases cured. Three employing the septum operation, two report benefit and one reports a cure. One reports cure by transplantation of the epithelial membrane. One reports benefit by cupric electrolysis, and one reports negative results in which skin grafts were planted upon the turbinates and septum.

Answers to question number six, (Have you tried treating a atrophic rhinitis with autogenous vaccines or anything similar?), brought 111 replies in the affirmative. 73 reported that they had used autogenous vaccines, 33 had used massolin (a preparation of bacillus vulgaris), two had used vaccines, one used Friedlanders bacillus vaccines, and one of the triple staphylococcus vaccine.

Answer to question number seven, (What results have you obtained from your treatment described under No. 6?), of the 73 who had used autogenous vaccines, 30 reported cases benefitted, 40 reported negative results, and three reported cases cured. Of the 33 who used massolin 20 report cases benefitted, 11 report negative results and two report cases cured. Those using the stock vaccines, the Friedlanders bacillus vaccine and the triple staphylococcus vaccine report cases only benefitted.

Under the treatment of atrophic rhinitis with autogenous vaccines I will quote replies received as follows: "Yes I have used autogenous vaccines in the treatment of atrophic rhinitis and I think it is probably the best available treatment. Two cases thus treated seem to gain more benefit than by any other method", again, "Yes and it is the best treatment I have ever used. It will stop the malodor and crust formation. Each case is a rule unto itself. If these cases were treated earlier by this method we could get very much better results in every way", again "Yes also lacto bacillus preparations. Results obtained were negative. Lacto bacillus preparations were used in 24 cases and autogenous vaccines in 16. In four of the later they were given during exacerbations from tenacious colds which were distinctly improved, but later an increased susceptibility to colds was noted in these cases and vaccines lost their influence in controlling them. I will be glad to have you make any use you may care to of this information etc."

In closing I will quote a letter received in lieu of the filled

out sheet from one who is considered among the leading rhinologists of the world. "I am in receipt of your letter, and like every one else I have tried every conceivable remedy for atrophic rhinitis and am sorry to say am in no position to suggest any particular thing that will be of benefit. To my mind there is no more distressing and discouraging condition to treat, and I have tried everything from cleaning out affected sinuses to the simple cleansing process which is familiar to everybody. In some cases I have narrowed the larger nostril by displacing the septum and by injecting paraffin into the inferior turbinate bone. Little has been accomplished by these proceedings. In other cases I have gotten results by cleaning daily and by making applications of one of the silver baths such as argyrol 20 percent or nargol 25 percent. In a few cases the external application of the ultra violet ray by the bi-polar method has given some results, mainly by increasing the circulation of these parts. Sometimes the insertion of the vacuum electrode into the nose and throat or applied over the upper cervical vertebrae has been of benefit.

Personally I believe that most cases of atrophic rhinitis are due to some affection of the sinuses particularly the ethmoids and sphenoids in early childhood, which has been left alone because it has been unrecognized. The constant discharges from these sinuses has a peculiar effect on the mucus membranes of certain individuals and unfortunately by the time they get into the hands of a specialist, the case is beyond cure. Recently I have had a case which has been most distressing, in which I had an x-ray picture taken which showed the total obliteration of the frontal sinuses and showed the antra filled with thick fibrous tissue, the ethmoids gone and the sphenoids very much thickened and no indication of pus. This woman's mucus membranes suggest scleroma and the dryness of the throat has extended down below the vocal cords.

Although I do not consider it possible by any means at our command, to cure cases of atrophic rhinitis there is no doubt that the general physical condition of the patient has a great deal to do with the suffering or the relief from suffering at any given time. For months they will have no complaint, but as soon as their system is run down, no local treatment that I know of seems to be of any use. Change of climate and freedom from worries of business and household cares accomplishes more than any application to the throat and nose." I take this opportunity to express my appreciation to those who were considerate enough to return filled out sheets to me which made the writing of this brief paper for the treatment of atrophic rhinitis from the standpoint I have taken possible.

MEDICAL REPORT

DR. A. L. WRIGHT, Carroll

DIED IN PARIS, FRANCE, JULY 19, 1913

The following case is an unusual one of thrombosis of the superior mesenteric vein, simulating obstruction and indicating the difficulties encountered in making a satisfactory diagnosis of this condition. The patient, a man of sixty-two years and apparently in good health, while on a visit to Paris was suddenly taken with diffuse pain in the abdomen. He was not nauseated and did not vomit until he had returned to his hotel and taken a little roll and coffee, and then only some time afterwards with the production of a little bile and mucous. The pain was continuous, however, but unlocalized, and although he was never constipated, he did not have a movement of the bowels that morning, and the day before he remarked that the movement was not as large as usual. Under the influence of two hypodermics of morphine,—for the patient was a physician,—he passed a fairly comfortable night. The following morning the pain was still present and there was no movement.

He was sent to the American Hospital with this history, and careful questioning failed to throw further light on the condition with the exception that he had had a severe attack of appendicitis in 1908, with abscess and that shortly after the operation he developed the ventral hernia—otherwise there was never any constipation nor abdominal pain at any time and digestion was apparently unimpaired.

The patient, on admission, had a steady, regular pulse of 84, while the temperature remained around 38°C. He complained of diffuse pain in the abdomen, not localized but through the entire lower part of the abdomen, and said it felt as though something were bursting. His bowels had not moved for a day and the abdomen was distinctly distended, but owing to the marked obesity of the patient, it was impossible to obtain much information from examination. In the lower right quadrant was a protruding ventral hernia from the old operation for appendicitis performed in 1908. The greater part of the ascending and transverse colon could be distinctly felt, and there was a tympanitic note throughout the abdomen. At that time no palpable mass could be found and tenderness, which seemed to be general, was if anything more pronounced in the region of the hernia. Examination of the heart and lungs was absolutely negative,—possibly a slight accentuation of the aortic second sound. The urine was of normal gravity, but contained a slight trace of albumen and was surcharged with pigments. It was then decided to give a lockwood irrigation which induced the expulsion of some gas and many flakes of mucous, but no fecal matter. An irrigation performed later in the day yielded the same result, but with the production of a greater amount of gas. Gastric lavage revealed the presence of no fecal matter in the stomach, only a little bile and mucous. Rectal examination was almost impossible owing to the great irritability of the anus. Finally a leucocyte count was made revealing 22,600 leucocytes, the great majority of which were polymorphonuclears. Inasmuch as it was impossible to make a positive diagnosis, in view of the fever, leucocytosis and manifest distention of the patient with little result from irrigation, it was decided that operation was imperative, but the patient refused all operative intervention. It was then decided that the only hope lay in purgation and a teaspoonful of castor oil was given every half hour, inasmuch as the obstruction was apparently

incomplete. Compresses were applied to the abdomen; the patient put on very little water at intervals, and after the complete administration of the castor oil, an irrigation was given with the production of considerable liquid brown fecal matter. This continued at intervals through the night. The Murphy drip and sugar solution which had been used almost continuously, had to be discontinued owing to the liquid and malodorous fecal emissions which followed. The following day found the patient in greater discomfort, more pain and the abdomen was very considerably distended. At this time a mass resonant on percussion and distinctly tender, could be felt in the neighborhood of the hernia. The temperature had gone up and the pulse, never fast, was then 92.

The patient finally consented, as the last resort, to operation by Dr. Du Bouchet. An incision was made through the old scar, and several adhesions cut. An enormously dilated and congested cecum and ascending colon emerged from the wound, and owing to the great distension and marked obesity of the patient, it was exceedingly difficult to obtain a good exposure; so the wound had to be further opened. On incision considerable purulent and blood tinged fluid escaped from the abdomen. The intestine were intensely engorged, dilated, and bathed in an exudation of bloody fluid—one band was found over the transverse colon and liberated, but this was certainly not the cause of the trouble. Pus was found in the neighborhood of the splenic flexure, but here, and in the region of the sigmoid, the colon appeared normal and undilated, the slightest handling produced bleeding, and it soon became apparent that there was no recognizable lesion and that the only possible explanation was a thrombosis of the superior mesenteric vein. A thorough exploration of the entire intestinal tract was made. The patient's condition was precarious and the cecum was punctured with the evacuation of a large quantity of dark colored fecal fluid. The fluid in the abdomen was absolutely without odor. The abdomen was closed and cecum left protruding in the wound with a large rubber drain in the small intestine and one in the large. It was evident that the patient could not live long and several hours later, after partial reaction, in spite of vigorous stimulation, he died.

A postmortem was performed, which confirmed the diagnosis. A thrombus was found in the ileocecal branch of the superior mesenteric vein, while the colon and intestine were absolutely free from ulcer or perforation.

THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

EDITORIAL

State Board of Health.

We published in the August Journal the Bill creating the new State Board of Health, also some observations on medical legislation passed at the 1913 Session. A small Board with more centralized powers would seem at least to be more efficient provided the Board has sufficient authority and is selected with a careful consideration as to the fitness of its members otherwise conditions would be worse than with a large Board.

Whether the appointing power has exercised a proper degree of wisdom in its selections or whether it has been influenced by political considerations, the future must determine.

The appointment of Dr. Bierring will be accepted as evidence of the intention of the Council to promote efficiency. We do not know the other members of the new Board and therefore are not in a position to make any comments as to their fitness.

A good deal of doubt has been expressed as to the possibility of securing a competent Board of Health under our political methods, but let us hope this is not true; that it will be seen that to secure the coöperation of the profession, a Board must be appointed that will properly represent the profession of Iowa and in which the profession will have confidence.

The new board is as follows:

Walter L. Bierring, M. D., (R) 1 yr. Term expires June 30, 1914. Des Moines.

Geo. F. Severs, M. D., (E) 2 yrs. Term expires June 30, 1915. Centerville.

J. L. Tamisiea, M. D., (R) 3 yrs. Term expires June 30, 1916. Missouri Valley.

H. A. Dittmer, M. D., (H) 4 yrs. Term expires June 30, 1917. Manchester.

Lafayette Higgins, Civil and Sanitary Engineer, Des Moines, 5 yrs. Term expires June 30, 1918.

Guilford H. Sumner, M. D., (R) Secretary and Executive Officer. Des Moines, 5 yrs. Term expires June 30, 1918.

The four physicians constitute the Board of Medical Examiners, and the Secretary is the Secretary of both Boards. Dr. Walter L. Bierring was unanimously elected President of both Boards, at the first meeting and organization of the Boards, which was held July 16, 1913.

Important Suit Won.

"On January 28th, a most important suit against a member of the Society, Dr. C. A. Shepard, was begun in Los Angeles and lasted over a period of seven days' trial, resulting in a verdict for Dr. Shepard. The suit was for \$50,000 and it was alleged that he had fraudulently or untruthfully diagnosed a case of tuberculosis when in truth the patient did not have tuberculosis. We all know that it is of the greatest importance to the patient suffering from beginning tuberculosis to have the condition recognized early and long before the sputum is filled with bacilli. Had this most unjust suit been won by the plaintiff a number of similar suits would have been filed against physicians specializing in tuberculosis work, and if we may judge by the results when such suits are defended by "insurance" companies, the plaintiff would have secured a verdict."

The Editor of the California State Journal of Medicine in commenting on this case says: "And just remember that the State Society Medical Defense is real defense; it is not like insurance where the company will get out of defending a suit if it can by any technicality do so. We took charge of just such a case in San Francisco. The doctor was insured but on a technicality the company refused to defend him. The Society looked out for him, a demurrer was introduced and the case thrown out of court. On January 31st a judgment for \$3000 was given against a physician in Los Angeles not a member of the Society but who had paid for "insurance" and was, more or less, defended by the insurance company. A couple of months before that another physician in the same place, Los Angeles, also defended by an insurance company, had a judgment against him of \$2,500. Does that sort of "insurance" do you much good?"

We hope some member who reads medical journals will take this number around among his friends and read to them some of the things that make the practice of medicine burdensome. (Cal. State Journal of Medicine, March 1913.)

No Liability for Error in Judgment—Failure to Discover Infantile Paralysis.

The Supreme Court of Washington affirms a judgment for the defendant.

"It needs no argument, the court says, to show that there could be no recovery of damages against the defendant, unless, as a medical man of ordinary skill, he should have correctly diagnosed the case as an injury to the sciatic nerve, and was negligent in his treatment. If, then, there was no evidence that there was such an injury, when all the facts on which the diagnosis must be predicated were included, but rather the evidence, without exception, excluded such an injury, there was nothing to submit to the jury. If the defen-

dant could be held liable because he did not make a proper diagnosis of the case on his new theory that the child was suffering from infantile paralysis, then the court was in error. But in an action for malpractice a physician cannot be held for an error in judgment as to the disease his patient is suffering from, since all that any physician can give to any case is his best judgment; and, if he exercise that judgment as a man of ordinary skill would exercise it, there can be no recovery of damages. The testimony of the physician called by the plaintiff was to the effect that the symptoms present in this case from Thursday night to Sunday morning might be diagnosed by men of ordinary skill in the medical profession as typhoid fever, multiple neuritis or infantile paralysis, and that the treatment given by the defendant in no way contributed to the present condition of the child. There was, therefore, no evidence in the case that the treatment by the defendant was negligent or unskillful. The most that could be said was that he did not discover the infantile paralysis. From the evidence he could not have cured it if he had. It could not, therefore, be said that his failure to discover its presence, or his subsequent treatment, was responsible for the child's present condition." (Journal A. M. A. March 15, 1913.)

Progress of the Albuminuria Observed so Frequently in the Apparently Healthy.

Banninger in a series of 396 men seeking life insurance in the years 1900 and 1901 with albuminuria, but with no other physical signs of disease, found on analysis that the 396 cases could be divided into three groups: (1) one of 115 men where albuminuria only was present and no casts; (2) a group of 203 cases where the albumin and hyaline casts were present; and (3) a group of 53 cases where the albuminuria was associated with granular casts. Ten years later 70 out of the 396 men were again examined. Of the 20 who ten years previously had albumin, 12 were apparently normal, presenting no signs of cardiac or renal disease; albumin had disappeared. In 8 cases albumin was still present and in 4 casts were also found. In no case among the 20 was interstitial nephritis present. As regards the second group of 203 men in whom albumin and tube casts had been present ten years before, 30 cases were examined. One presented definite signs of nephritis and two were regarded as doubtful; 18 were found normal, and 9 showed the condition of urine the same as ten years previously. Of the 53 cases in which albumin and granular casts were present ten years before, 20 cases were examined, 8 were apparently normal so far as the heart and kidneys were concerned; 2 suffering from interstitial nephritis and 5 others doubtful.

In referring to the original group of 396 cases, Banninger points out that "25 deaths had occurred in the course of the ten years; this mortality is high, inasmuch as the expected mortality in ten

years for the 396 men would have been 16 instead of 25. This excessive mortality agrees with the experience of insurance companies, and from statistics from insurance experience, it would appear that if the mortality for sound lives per 10,000 be represented by 100, that of a similar group of lives where albumin and hyaline casts were present would be 137, and for a group where albumin and granular casts were present it would be 220. Thus the mortality is lowest among men showing albumin only, but it is notably greater even in these than in perfectly healthy subjects. One of the most striking facts elicited from the study of the deaths was that whereas there were 3 deaths from nephritis, there were 8 from pulmonary tuberculosis. The mortality from nephritis was high, but all the deaths occurred in the group of cases where granular casts had been present. The absence of any case of nephritis in the series of 20 cases of albuminuria after the lapse of ten years shows that it is at any rate exceptional for the albuminuria of young adults to be a sign of early nephritis, but the high mortality from tuberculosis would tend to suggest, in the opinion of Barringer, that the presence of albumin in young adults is a sign of lowered resistance and possibly even of an increased susceptibility to tuberculous infection. (*Progressive Medicine-Archives of Internal Medicine.*)

Typhoid Fever in the United States.

McLaughlin has collected some very interesting figures in relation to the prevalence of typhoid fever in the United States and has compared them with statistics gathered from 33 of the principal cities of the leading countries of Europe. In 50 American cities of over 100,000 with an aggregate population of 20,250,000, the death rate was 25 per 100,000. Combining the death rate of 33 cities in Russia, Sweden, Norway, Austria-Hungary, Germany, Denmark, France, Belgium, Holland, England, Scotland, and Ireland, with an aggregate population of 31,500,000, the death rate from typhoid fever was 65 per 100,000. The excess in death rate in our own country as compared with Europe was 18.5. McLaughlin further states that the smaller cities and villages have a much higher death rate and an estimate would give 175,000 preventable cases of typhoid and preventable deaths of 16,200 in the United States. It is stated that in 1909 there were more cases of typhoid fever in the United States than there were cases of plague in India in spite of the fact that the population of India is $2\frac{1}{2}$ times greater than that of the United States.

In Russia from January 1907 to October 1911 there occurred 283,684 cases of Asiatic cholera. In the United States for the same period there were 1,250,000 cases of typhoid fever.

In Italy for the years 1910 and 1911, there were 16,000 cases of cholera with about 6,000 deaths. During the same period in the

United States 500,000 cases of typhoid fever with about 50,000 deaths. It would appear that we have become so accustomed to typhoid fever in this country that the occurrence of 250,000 cases a year with 25,000 deaths seems hardly to excite our attention or deserve notice, but a little reflection ought to convince us of the seriousness of the matter, especially when it is a well recognized fact that typhoid fever is in a large measure a preventable disease. (Progressive Medicine.)

An Eight Hour Law for Nurses.

A bill was introduced in the Washington legislature to limit the hours of work for nurses to eight hours a day. This indeed would be a strange condition of things and is of course entirely impracticable. It would make the employment of nurses almost impossible and would force most people to go back to the time when the sick were dependent on the services of friends and neighbors. It would in a great measure do away with trained nurses unless the sick could arrange to be sick only eight of the twenty-four hours each day, or could afford to employ three nurses for the same case.

It is said this is inspired by the labor unions for the purpose of bringing all working women under an eight hour requirement.

Limiting Enrollment at John Hopkins.

It is an interesting fact that the Medical Department of the Johns Hopkins University has on account of limited space been obliged to announce that the enrollment must in the future be limited. The present year enrollment is 355; fifty students were refused because of lack of room. This seems to indicate that young men entering the medical profession are seeking the high class of schools. We have probably heard the last of the "poor young man" plea for cheap schools.

Splitting of Fees.

Governor Marshall in his message to the Indiana Legislature recently said: "In the interest of high professional training I recommend that the act creating the Board of Medical Registration and Examination be amended so as to require the Board to revoke the license of a physician who splits his fee with an expert physician or surgeon." (Pennsylvania Medical Journal.)

Judgement for Alleged Malpractice.

A jury in the Supreme Court of New York on January 10 awarded damages of \$11,700 to a woman patient for alleged unskillful treatment of a fractured leg, the claim being failure to use the x-rays and properly to place the bones in apposition.

Judgement for X-ray Injuries.

A woman patient in Chicago was, on January 19, awarded a verdict of \$10,000 against a practitioner of that city for alleged disfigurement and injury to eyesight from use of x-rays to remove a mole, without proper protection of the rest of the face.

FAILURE OF THE BUSINESS BUREAU OF THE DUBUQUE COUNTY MEDICAL SOCIETY TO GIVE RESULTS EXPECTED; SEVERAL YEAR'S EXPERIENCES.

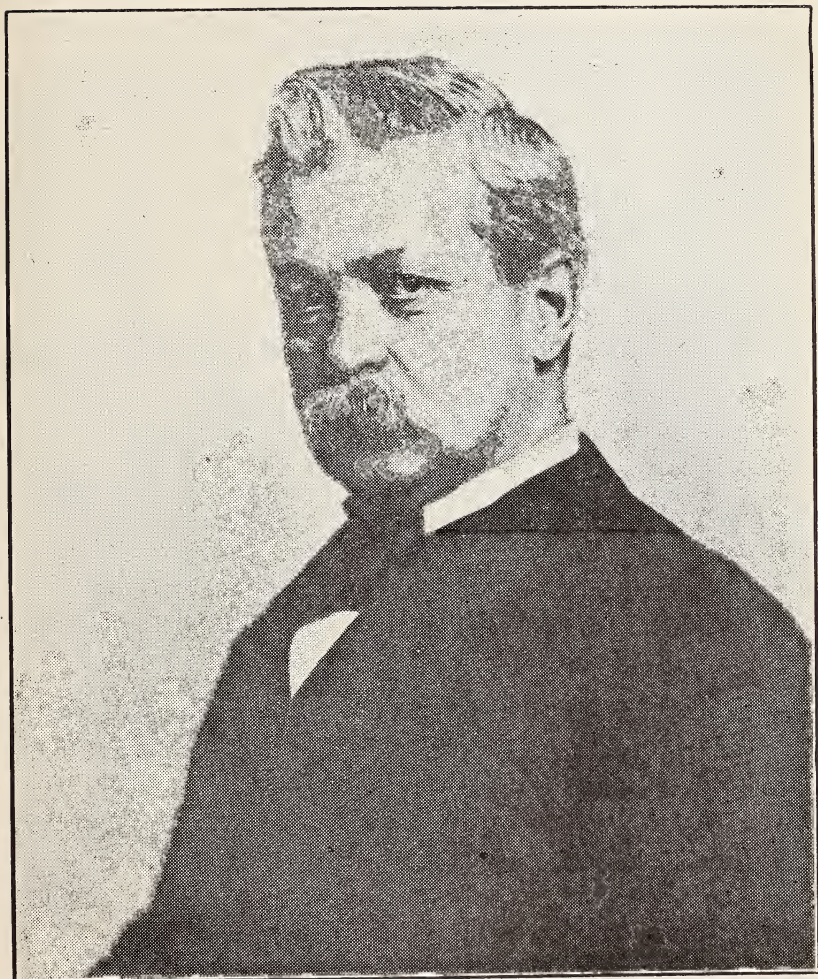
HENRY GLOVER LANGWORTHY, M. D., Dubuque, Iowa.

Having been asked on more than one occasion of late regarding the progress of the Business Bureau of the Dubuque County Medical Society, I take this opportunity to state briefly our actual experience. Although it is not an agreeable task to report the failure of one's pet scheme to work out successfully, nevertheless, a certain duty is owed to the profession to give final results so that others may profit by previous experiments. The history of this department of the county society is as follows:—Some four years ago I was instrumental in having the society adopt what I fondly believed to be a decidedly practical business bureau with a recognized attorney at its head who would make a systematic attempt to collect old bills. All the physicians were asked to do was to turn in such statements of accounts as they desired collected on which of course varying degrees of commissions would be paid according to the amount of cash collected. The entire expense of conducting the bureau was to be borne by the attorney officially appointed by a business bureau committee of the society. There seemed at the time many excellent reasons for the creation of a collection bureau in the city more especially perhaps than in the country and as the plan seemed fundamentally sound we decided to try it out as thoroughly as possible. During the first year about ten thousand dollar's worth of old bills was turned into the bureau and our attorney had a fair amount of success although not making any money out of it. Gradually however as the better bills were collected, either in whole or in part, the attorney had a harder and harder time of it and in about twelve months handed in his resignation. A second attorney was then appointed, all old accounts turned over to him and an urgent call made for fresh ones. The second attorney also unfortunately found the path a "rocky road to Dublin" as very few fresh bills turned up in spite of the repeated solicitation and physicians as a whole did not seem to support the effort any too well. During the third year of our existence the attorney in charge found that if one considered the matter of time, literature, stamps and etc., as worth anything to him that he had practically lost money on the proposition as a whole and was discouraged. Since that time the lack of bills being turned in for

collection has necessitated the gradual death of the bureau although on paper at least it is still in existence. Even listing the dead-beats was not found worth while owing to the fact that the list by the time it could be completed was without real value as some of the patients had died, many had left town and the physicians did not make up their dead-beat lists to comply with our effort of listing all those unworthy of credit. This left us no alternative but to acknowledge frankly that the ordinary business credit guide as published by established houses in Dubuque was far more useful than anything the business bureau could arrange. In conclusion it may be said that while the establishment of a business bureau in Dubuque has resulted in some saving to the society the members on the whole often thought the commissions under which the attorney had to work were so high that they preferred to look after them themselves or in a cheaper manner. For any who may contemplate the establishment of a business bureau I would refer them to a previous article "Practical Business Bureau for County Societies" as published in the Jr. A. M. A. Oct. 15, 1910, Pages 1406 and 1407, and Journal Iowa State Medical Society, Aug. 15, 1911, Pages 91 to 94, as the plan presented was pretty carefully thought out and it may be that under different conditions or better soil a success might still be founded upon the remains of our failure.

In connection with this present communication I would like to state that very recently I received a letter concerning the bureau of the Chicago Medical Society to the effect that this bureau also had gone through many trials and tribulations and that up to November 1911 had cost the society quite dearly for the experience. Last year however I am told a corporation was formed known as the "Bureau United Medical Society" and the bureau made a separate and distinct organization from the medical society itself. Mrs. J. W. McMahhan now at the head of the above writes me that they believe they have at last solved the problem of collecting doctor's accounts in a satisfactory way but in order to do this had to get entirely away from the commission plan and charge the doctors a straight fee of so much per month, the fee varying from \$1.00 to \$20.00 per month according to the amount of business each doctor may possess. From the foregoing I may say that it seems to me fairly evident from the rather poor success of both these business bureaus that a large number of doctors will probably never regard the payment of a doctor's fee on a par with that of the butcher or baker and that they do not, I am glad to say, look upon the practice of medicine as a strictly commercial pursuit.

Also it is doubtful in the long run whether most physicians either care to or gain greatly by forcing collections especially from people who either earn little more than enough to support a family or who while possessing a bit of property perhaps have almost no available cash.



Arthur Lee Wright--1851-1913

Iowa City, April 9, 1913.

To the Editor:

Dear Sir:—I wish to inquire whether you can tell me where I may obtain the Transactions of the Iowa Medical Society which we need to complete our set. We lack volumes 3, 9, 11-13, 20-21, and 24 to date. If you do not know where they may be supplied would you put a notice in the Journal of the Society stating that we lack these volumes and would like to have them to complete our set.

Very truly yours,

M. G. Wyer.

Librarian, State University.

New York and New England Association of Railway Surgeons.

The twenty-third annual session of the New York and New England Association of Railway Surgeons will be held at the Hotel Astor, New York City, on Wednesday, October the 22nd, 1913. A very interesting and attractive program has been arranged. Dr. Hugh H. Young, of Baltimore, will deliver the "Address in Surgery." Railway surgeons, attorneys and officials and all members of the medical profession are cordially invited to attend.

Dr. John W. LeSeur, President, Batavia, N. Y.

Dr. George Chaffee, Corresponding Secretary,

338-47th Street, Brooklyn, N. Y.

SOCIETY NOTES

To the Members of the Wapello County Medical Society:

This is the ninth consecutive Annual Program issued by the Wapello County Medical Society. The society is to be congratulated on the sustained interest manifested by the members during the past year. Out of thirty-nine papers there were but three failures and in each instance a good excuse was presented. The present program is somewhat of a departure, in that we are to give more attention to the drugs by which we hope to benefit the sick than to the nature of diseases. A request was made of each member of the society for a list of twenty drugs which he considered the most necessary and useful in his practice. Every return, thirteen in all, gave Digitalis, Iodine, and Nux Vomica. Twelve included Opium and Mercury, eleven gave Cinchona and Salicylates, ten gave Iron, and eight gave Bismuth, Acetanelid, Arsenic, Bromides and Chloral. The other drugs given the highest numbers were Ether, Ergot, Salines, Potassium, Phenol, Belladonna, Castor Oil and Aconite. Twenty-five drugs were mentioned by only one. Altogether there were sixty-six different drugs named. The twenty drugs receiving the highest vote are taken up for discussion.

Every paper on this program is an important one and it should be the pleasure of each member of the Society to benefit himself as well as encourage the essayists by making a strenuous effort to be present at every meeting. A number of physicians from other cities have kindly consented to give the benefit of their superior knowledge. We know they will receive the attention the importance of their subjects and their ability entitles them to.

Unless otherwise provided the meetings will be held at the office of Dr. A. O. Williams at eight o'clock. Keep this program where you will see it.

Officers of the Society 1913.

Dr. E. J. Lambert, President; Dr. H. W. Vinson, Vice-Pres.; Dr. J. F. Her-
rick, Secretary.

Censors—Dr. F. W. Mills, Dr. A. O. Williams, Dr. C. E. Huband.

Dr. S. A. Spilman, Delegate to State Society, Dr. B. D. LaForce, Alternate.

Committee on Public Health and Legislation—Dr. J. A. Hull, Dr. E. A. Sheafe, Dr. H. W. Vinson.

September 2, 1913.

Mercury, Dr. W. E. Anthony; Iodine, Dr. M. Bannister.

September 16, 1913.

Tonics, Mr. E. A. Herrick, Ph. G.; Salicylates, Dr. J. A. Hull.

October 8, 1913.

Anatomy in Surgery, Dr. C. H. Magee, Burlington; Hexamethylenamin, Dr. F. W. Newell.

October 21, 1913.

The X-Ray, Dr. E. A. Merritt, Council Bluffs; Phenol, Dr. E. A. Sheafe.

November 4, 1913.

Fractures, Dr. C. E. Ruth, Des Moines; Nitrites, Dr. E. T. Edgerly.

November 18, 1913.

Digitalis, Dr. H. W. Vinson; Extemporaneous Preparations vs. Fixed Formulae, Mr. J. G. Parks, Ph. G.

December 2, 1913.

Belladonna, Dr. Harold A. Spilman; Salines, Dr. J. F. Herrick.

Annual Meeting.

Election of Officers.

December 16, 1913.

Iron, Dr. W. B. LaForce; Opium, Dr. S. A. Spilman.

January 6, 1914.

Cough Mixture, Mr. W. C. Middleworth, Ph. G.; Nux Vomica, Dr. W. C. Newell.

January 20, 1914.

Arsenic, Dr. E. B. Howell; Bromides, Dr. C. E. Huband.

February 3, 1914.

Acetanelid, Dr. F. W. Mills; Cinchona, Dr. J. C. Box.

February 17, 1914.

Cancer of the Uterus, Dr. S. A. Spilman; Cancer of Colon and Rectum, Dr. D. C. Brockman.

March 17, 1914.

Vaccines, Dr. E. T. Edgerly; Immunity, Dr. J. F. Herrick.

April 7, 1914.

Chloral Hydrate, Dr. J. W. Elerick; Ergot, Dr. H. W. Vinson.

April 21, 1914.

Castor Oil, Dr. M. Bannister; Aconite, Dr. C. A. Henry, Farson.

May 5, 1914.

Potassium and Sodium, Dr. J. B. Wilson; Bismuth, Dr. W. J. Herrick.

May 19, 1914.

Prescriptions, Dr. Maude Taylor; Wapello County Medical Society, Dr. A. O. Williams.

Hardin, Marshall & Franklin County Medical Societies held a joint meeting at Eldora, Iowa, August 31, 1913.

There was a large attendance from each of these counties. The

meeting was called to order at 2 P. M. by Dr. E. O. Koneman, President of the Hardin County Society.

Dr. O. J. Fay of Des Moines read a paper entitled "Differential Diagnosis of upper abdominal Disease". The discussion of this paper was opened by Dr. Walter L. Bierring of Des Moines, after which it was discussed by Drs. J. W. Osborn and A. C. Page of Des Moines; Fred Clark, Fairfield, Iowa; J. H. Peck, Des Moines; J. C. Powers, Hampton; Ralph Keyser, H. H. Nichols and M. U. Chesire, Marshalltown; N. C. Morse and J. E. King, Eldora; and A. D. Woods, State Center; and in closing by Dr. Fay.

The next paper was entitled "Valvular disease and Hypertension" by Dr. Walter L. Bierring of Des Moines. This paper was discussed by Drs. J. H. Peck, A. C. Page, M. U. Chesire, Wm. E. Marsh, A. D. Woods, H. H. Nichols and in closing by Dr. Bierring.

Dr. J. Fred Clark, Fairfield, Iowa, read the next paper "Athyreosis with slides". This was perhaps the most interesting paper of the program as Dr. Clark was able to show the progress of one case through a period of ten or more years of treatment. A curious circumstance was that Dr. Clark while awaiting a train in Marshalltown saw in the depot a case of athyreosis 15 years old that had not been diagnosed and Dr. Clark was able to persuade the mother to go to Eldora with him and the case was shown there.

Dr. Clark being compelled to leave as soon as his paper was read, the paper was not discussed.

The next paper on the program was a report of two cases of penetrating wounds of the knee joint by Dr. N. C. Morse, of Eldora. This was discussed by Drs. Fay, Powers, Keyser and in closing by Dr. Morse.

The last paper on the program was "A Possible New Method of treating Pulmonary Tuberculosis" by Dr. Wm. E. Marsh, Eldora. After the discussion elicited by this unique and thoughtful paper the meeting adjourned to meet at the Hotel Winchester at 8 P. M. for a banquet at which covers were laid for 70.

Lyons and Osceola County Medical Societies held a joint meeting at Rock Rapids, Iowa, August 6, 1913.

Meeting was called to order at 3:15 P. M. in the Comus Club Rooms by Dr. L. L. Corcoran, President of Lyon County Society.

Members present: L. L. Corcoran, J. M. Crowley, J. E. North, G. H. Boetel, R. B. Raleigh, F. J. Smith, F. S. Hough, F. P. Winkler, and visiting Doctors G. G. Cottam, F. I. Putman, Bouslough, Wallace, Spalding, Sherman, and Cress.

Minutes of previous meeting read and approved, a letter from Dr. M. Sullivan, was read wherein he asked to be excused from taking part in the program. Dr. E. W. Bouslough presented an application for membership in our society, his application was voted upon and accepted. Dr. F. J. Smith was received into the society on transfer from Polk County.

Dr. F. S. Hough, President of Osceola County Society extended an invitation to the Lyon County Society to meet the last week in October, the invitation was accepted.

Dr. Hough made motion that we meet jointly every season, viz. spring, summer, fall and winter, motion carried. There being no more business to attend to the program was called for.

Unfortunately none of the members who were on the program were present, the subject matter of the program was discussed by the doctors

present, after which Dr. G. C. Moorehead of Ida Grove, Ia., who is the eleventh district councilor of the Iowa State Medical Society gave a very valuable talk on Medical Ethics.

After adjournment the members of the Lyon County Society invited all Doctors and their wives and sweethearts to a picnic supper given by the members of the Comus Club at Lake-wood farm, after supper a general good time was participated in and all report the time of their lives.

The Southwestern Iowa Medical Society met at Creston, September 4, at the First Baptist church.

Program.

President's Address.

Oration on Surgery, Dr. William Jepson, Sioux City.

Early Diagnosis of Tuberculosis, Dr. John W. Peck, Des Moines.

Eclampsia, with Special Reference to Its Treatment, Dr. Geo. F. Niblock, Derby, Iowa.

Differential Diagnosis of Gall Stones, Dr. C. H. Mitchell, Leon.

Surgical Aspect of Gastric Ulcer, Dr. Donald MacCrea, Jr., Council Bluffs.

Subtentorial Tumors, Dr. Frank A. Ely, Des Moines.

A Study of the Heredity of Feeble-Mindedness, Dr. Jeannette F. Throckmorton, Chariton.

The Treatment of Appendicitis other than Surgical, Dr. Will Amdor, Carbon, Iowa.

Oration on Legal Medicine, Hon. M. L. Temple, Osceola.

On August 30, 1913, at Greenwood Park the Polk County Society held its annual picnic. A ball game between the lawyers and doctors, which resulted in a victory for the "medics", furnished entertainment. The game was umpired by Major Thos. F. Duhigg, whose unexpected and unique decisions were a source of great pleasure first to one side and then the other. After the game a delightful picnic supper was served by the doctors' wives, sisters, and sweethearts.

The Jackson County Society met at Maquoketa August 14, 1913 and listened to the following program.

Sarcoma; with report of a case. Dr. J. C. Bowen, Maquoketa.

Oxyoline, Dr. W. C. Post, Maquoketa.

Caesarean Section in Country Practice. Dr. L. K. Bolo, Maquoketa.

Prostatic affections and their treatment. . . Dr. W. L. Allen, Davenport.

The papers were all interesting and instructive, especially Dr. Allen's. We all enjoyed the Stereoscopic views he brought with him.

Scott County Society reports the following program for Tuesday Sep. 2, 1913.

"Compound and Ununited Fractures" . Dr. John F. Golden, Chicago.

"Orthodontia—an informal talk and demonstration"

. Dr. F. B. James, Davenport.

"The Hygiene of Swimming Pools" . . . Dr. T. W. Kemmerer, Davenport.

The Committee on Public Health Education has been organized with

Dr. M. N. Voldeng of Cherokee as chairman, Dr. Henry Albert of Iowa City, Dr. Paul E. Gardner of New Hampton, Dr. Lenna Means of Des Moines and Dr. Jeanette Throckmorton of Chariton. The state has been districted so that the members may do more effective work.

The Appanoose County Society met at Drake Free Public Library Assembly Room, Wednesday, August 27, 1913.

Program.

"Abnormal Presentations in Labor" Dr. C. S. Hickman
 "School Hygiene" Dr. I. L. Sawyers,
 "Gastro-Enteritis" Dr. C. M. Davis,,
 Report of Committee on any Clinical Cases presented to the Society.

President and Secretary of each component county society of the Iowa State Medical Society.

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Secretary:—Not reported for 1913.

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No. 4.

ADDRESS ON MEDICINE

RECENT ADVANCE IN THE KNOWLEDGE OF THE PATHOLOGY AND PHYSIOLOGY OF THE DUCTLESS GLANDS

IOWA STATE MEDICAL SOCIETY

JOSEPH SAILER, M. D., Philadelphia.

At the present day our understanding of the internal secretions is a mixture of fact and fancy, largely, I fear, the latter. Facts are derived from a variety of sources. The methods of study of the various ductless glands are first the comparative anatomy, their position and particularly their histology. Second the study of the physiology of these glands by various methods. These are principally extirpation of the glands, implantation and the results of injection of various so called extracts which for the most part consist of the substances of the gland itself in various solutions or suspensions. Third the study of the pathology of the glands and particularly of the clinical manifestations of their disorders. Fourth the study of the chemistry of the glandular substances and the isolation of active principle or principles.

I shall not attempt to discuss the comparative anatomy. This has been well summarized in Vincent's monograph on the internal secretions of the ductless glands. It has lead to very little that is of clinical importance up to the present time, but it seems not unlikely that in the future it will produce many important additions to our knowledge. The position of the gland in the body is of importance chiefly when, as a result of enlargement of the glands, certain neighboring organs may be invaded or compressed, as for ex-

ample the base of the brain in connection with pituitary tumors, the trachea when the thymus persists or becomes enlarged. The histology of the glands, however, is of considerable interest in as much as it has enabled us to recognize that many of these glands are complex in structure and the different parts have manifestly different functions. I need only instance the fact that the anterior lobe of the pituitary seems to be the important structure in connection with disease or extirpation, although extracts of the posterior lobe are apparently the only ones that contain active substances. That the clinical manifestations of the disease or extirpation of the thyroid were not understood until the parathyroid glands were discovered and separately studied, that there is apparently a great difference between the cortex and the medulla of the suprarenals, that the corpuscles of Langerhan's seem to have a very pronounced effect upon the carbohydrate metabolism of the body.

The pathology of these glands may be regarded in two ways. In the first place nearly all of them seem to be not infrequently the seat of tumor formation. This may be a simple enlargement sometimes described as adenoma giving rise to pressure symptoms, to signs that we interpret as excessive, to signs that may be described as diminished function, or it may be a malignant growth of the gland invading the surrounding tissues, as in certain tumors of the pituitary, giving rise to metastasis as is occasionally the case in the thyroid and almost invariably in the case of hypernephroma, or the gland may be the seat of some other type of tumor as for example a carcinoma which apparently acts by simply depressing its functions. A study of the clinical manifestations of these morbid changes has lead to the recognition of various well recognized types of disease. Of these the most clearly defined are acromegaly, gigantism, infantilism which may be associated with adiposity in connection with the pituitary; of exophthalmic goitre and cretinism, myxedema and cachexia thyreopriva associated with the thyroid; of Addison's disease associated with the adrenals; possibly of diabetes at least in certain forms associated with the pancreas. Less directly depending upon the changes in the gland are the various disturbances of growth such as progeria, dwarfism, congenital mental defects, various forms of disease of the skeleton in which may be included osteomalacia, rachitis and Paget's disease, precocity or delay in sexual development, the somewhat indefinite group of symptoms described by the term status thymicus, status lymphaticus and status thymico lymphaticus, a group of conditions associated with high blood pressure which is sometimes, upon scanty or no evidence ascribed to excessive activity of the chromaphil system and various disturbances of the gastrointestinal tract supposed to be the result of hormones derived from various sources which have to do with secretion and peristalsis, certain disturbances of the urinary tract such as diabetis insipidus which occurs sometimes but not invariably in disease of certain of the ductless glands, particularly the pituitary.

The study of the chemistry of these glands has up to the present times not extended very far. One definite substance which apparently constitutes the active part of the secretion of the adrenals, is adrenalin has been isolated. There is considerable less certainty that iodothylin and pituitrin represent the active substances of the secretions of the thyroid and the pituitary bodies respectively. For the rest of our work has been done with the whole gland substances, fresh or dry with aqueous, glycerin and alcoholic extracts of the glandular substances. The most typical hormone that we know, secretin, is produced by the action of hydrochloric acid on the duodenal mucus membrane. We know some of its physiological qualities, but the present practically nothing of the chemical structure. Indefinite suggestions regarding the glandular activity results from our observations of the action of certain substances introduced into the body upon the symptoms produced by the gland. Of these the most definite is the relation of calcium to thyrio priva. Studies of the chemical metabolism have hitherto lead to no definite information partly perhaps because various investigators have obtained different results. These have been made upon the metabolism of animals whose ductless glands have been the subject of experiment and in human beings in whom the ductless glands have been the seat of the disease. The most valuable have been those made upon the pancreas.

The definition of an internal secretion is not an easy matter. The external secretions as far as we know are all furnished by distinct glands consisting of epithelial cells resting upon the basement membrane beneath which there is a vascular plexus. The secretions are poured in various quantities upon the skin or upon the mucus membranes of the gastrointestinal, respiratory or genitourinary tracts. In all cases these reach the surface by means of a duct which communicates directly with the cavity or by means of branches with the cavities of the gland. The ductless glands as we understand them consist of aggregations of cells arranged in various ways and of various connective tissues as the neuroglia in the pituitary, or the connective tissue of the medulla of the suprarenals containing a smaller number of cells. Very frequently in these glands different types or groups of cells may be distinguished by their arrangement, their structure, their staining reactions but rarely have we more than a suspicion, if even that, of the functions belonging to these different types. One particular group may be mentioned, those cells which, in the presence of salts or acid of chromium become stained yellow or brown. These are variously known as the chromophil by Stilling, the chromaffin by Kohn, the phaeochrome by Pohl and the chromaphil by Vincent. These are found in the suprarenal glands, in some of the sympathetic ganglia, particularly the abdominal portion, and in a peculiar tissue lying in front of the aorta in some of the lower animals. As far as is known this type of tissue has to do

with the production of a substance that raises blood pressure. In addition in some of the glands microscopic evidence of secretion may be observed. This is particularly true of the thyroid and to a less extent of the pituitary and appears as the familiar colloid material often lying in small cavities lined with epithelium. In still other glands as in the chromaphil tissue to which reference has already been made, substances are found that give definite physiological reactions. Assuming therefore that these glands are active, that they produce something necessary to the body, there has been considerable question as to how it becomes distributed and there appears to be little doubt that in the majority of cases it enters the veins leading from the glands and is carried by them to the general circulation. Indeed numerous investigations have shown that there is an excess of adrenalin in the suprarenal veins and in the blood removed from the ascending cava. It has been supposed, particularly by Cushing, that the infundibulum acts as a duct for the pituitary and pours some of its secretion into the cerebro spinal fluid but his work regarding the blood pressure raising qualities of this fluid has not been confirmed. There is considerable doubt whether, after puberty and possibly, whether after the first year of life, there is any secretion at all from the thymus gland. If there is such a secretion it is possible that it passes through the lymphatics rather than the blood vessels. The amount of secretion furnished by any of these glands cannot be accurately estimated. We can however, surmise something regarding it in a few instances. In the pituitary either it is fairly considerable or the amount present at any time in the glandular tissue is small for considerable quantities of the gland are required to produce any effect in cases in which the gland has been removed. In thyroid on the other hand the amount secreted must be of considerable potency or else the amount in the glandular tissue very large for small doses, a few decigrams of the dried thyroid gland, produce definite symptoms. In the adrenals we have been able to estimate that the amount of adrenalin in the general circulating blood varies in one part in two million to one part in four million. Hoskin and McClure have estimated that 0.13cc of a one millionth solution of adrenalin is secreted per kilo of body weight per minute that is for a man of 75 kilos about 0.0014 grams per day. The amount in the glandular tissue has also been measured but seems to vary a good deal under different conditions. Regarding the internal secretion of the pancreas very little is known. I have elsewhere spoken of the apparent efficient results of feeding extract of pancreas, that is to say dried and powdered gland to patients with chronic pancreatitis. Pratt has observed the same thing as the result of feeding raw pancreas to pancreatectomized dogs. It seems impossible to explain this beneficial result by supposing that the small amount present in a few decigrams of dried pancreatic tissue can have any action and we must suppose

that in these cases the actual effect is produced by a substitution for the lacking internal secretion. It therefore seems reasonable to conclude that the amount of secretion is small and, as in the case of the thyroid, of high potency. Regarding the internal secretions of other glands we have little information. This applies particularly to the pineal gland, the sexual glands, the liver, the kidneys, the carotids and coccigeal bodies all of which are supposed to have functions of this kind as are also the mucus membrane of the gastrointestinal tract, possibly all the mucus membranes and finally the skin. I have already indicated some of the variety of ways in which these glands are supposed to act upon blood pressure, upon coagulation of the blood, upon growth, development, nutrition, to stimulate the secretion of other glands, as for example the effect of secretion on the pancreas and probably the effect of other hormones derived from other portions of the gastrointestinal tract, upon other digestive glands. It may well be that all the external secretions are controlled in this manner. An interesting phase is the action of these glands one upon another. This was early suggested by Sajous of Phila. He had a brilliant idea but was not able at the time to marshal sufficient facts to carry conviction. Later the evidence gathered by various investigators confirmed his idea but disproved very largely his conclusions. This much at least is known, that the sexual glands are in some way influenced by the activity of the pituitary body probably also by the activity of the pineal gland and the cortex of the suprarenals. The hyperactivity of the pituitary appears to stimulate their growth, and pituitary deficiency retards or prevents their development. On the other hand excessive action of the thymus seems to retard their development but only to a moderate extent. The thymus and thyroid appear to have some association as is shown by frequent enlargement of the thymus in Graves' disease and the thyroid appears to stimulate the suprarenals because an excess of adrenalin in the blood is commonly found in the same condition. The pituitary and adrenals seem to depress that part of the pancreatic secretion that governs carbohydrate metabolism and glycosuria occurs when they are over active. On the other hand deficiency of the pituitary stimulates this function to a very high degree. Extraordinary examples of carbohydrate tolerance have been observed in conditions of pituitarism, infantilism and adiposity.

The pineal gland not many years ago was regarded as perhaps the most typical vestigial structure. It represented the relics of an interparietal eye useful to the primeval saurians that lay upon the bottoms of lakes and rivers, to warn them of dangers descending from above. But of late it has taken on new dignities and has been included among the glands of internal secretion, and if no definite symptoms have been discovered, at least a train of symptoms and bodily changes have been associated with its morbid conditions. It

has at least a somewhat glandular structure, in addition to the part the represents the hypoplastic eye. Denby has described two sacs, dorsal and ventral, the paraphysis and epiphysis. The glandular parts contain cells of various types, connective tissue, nerves, numerous blood vessels and nonstrained fibres (Dimitrova). Galasescu and Urechia and Constantini have described some glands that may suggest or bear some relation to an internal secretion. Cutare has described a prepenial body. Apparently some of the cells are ependymial and related to those of the choroid plexus.

Very little work has been done upon the physiology of the gland. Exner and Boese have destroyed the gland in a number of rabbits twenty two of which survived the operation. These were no definite results not even in the direction of precocious sexual maturity. Cyon injected extracts intravenously. The action of the heart was effected and with large doses there was a fall of blood pressure. Dixon and Halliburton and Howell have confirmed the blood pressure reducing effect. Cyon suggests that it may regulate the flow of the cerebrospinal fluid.

The pathology of the gland is not complex. Various tumors occur including teratomata and cysts. Pappemheimer reports one in a boy of ten that gave rise to the symptoms of intracranial pressure. It was a neuroglioma. He believes that this case indicates that the penial gland is not a gland of internal secretion.

The symptom complex is, however, fairly well defined and Pellizzi has given to it the name of macrogenitosomia precox. This consists of adiposity, appearance of pubic hair, increase in the size of the external genitalia, early and rapid ossification of the skeleton and commonly the symptoms of brain tumor, headache, choked disk, vomiting and vertigo. The intelligence is not precocious. Such cases have been recovered by Hempel, Marburg, Raymond and Claude and others. Sometimes in young boys there is a rapid growth resembling gigantism (Frankl-Hochwart). All these symptoms are ascribed to deficient function and as they resemble those of hyperpituitarism it has been supposed that perhaps the two glands are antagonistic.

Any attempt to give a brief summary of our knowledge of the suprarenal glands will necessarily fail. Beidl in the second edition of his monumental work upon the internal secretions devotes no less than 322 pages excluding all references and illustrations to this subject and Vincent in a smaller monograph covers 245 pages and his references are no less than 776. I can therefore give but the barest outline. These bodies consist of a cortex and a medulla. They contain a large amount of chromaphil substance. In the medulla is found a definite chemical substance, adrenalin, which appears to possess many if not all of the qualities of suprarenal substance. The glands are necessary to life, their extirpation being followed by death, usually in a comparatively short period, accompanied by

profound asthenia, fall in blood pressure and occasionally convulsions. In human beings destruction of the suprarenal glands by disease processes gives rise to a definite disease syndrome first recognized and described by Addison. (1855) This consists also of profound asthenia, pigmentation of the skin, fall in blood pressure, high carbohydrate tolerance. The signs of disease may be complicated by the nature of the pathological process which may exist in other parts of the body. It is commonly tuberculosis. The secretion of the gland is apparently under nervous control. Section of the splanic nerves causes at first fall in blood pressure but later some degree of functional restoration may occur. Stimulation of the peripheral end of the cut splanic causes apparently an increase in the amount of adrenalin secreted which may be recognized in the blood coming from the suprarenal veins and in the adjacent portions of the ascending cava. Puncture of the floor of the fourth ventricle causes an increase of adrenalin in the blood serum (Niels). Various methods have been devised for the recognition of adrenalin. Of these the most important are the Meltzer-Erhmman which consists of the dilatation of the pupil of the enucleated frog's eye if placed in a solution of serum containing adrenalin. Loewi has applied this in pathological conditions involving the pancreas. Second the method of Fraenkel which consists in the production of contractions in the segment of a rabbit's uterus which has been suspended in Ringer's solution. If to this Ringer's solution some adrenalin be added or serum containing adrenalin, the contraction may be shown by graphic methods. Trendelenberg's method consists of passing adrenalin through the circulation of a decapitated frog whose blood has been replaced by Ringer's solution. The rapidity with which the drops fall from the cut end of a blood vessel is determined if adrenalin or serum containing adrenalin is added to this solution. Hoskin's method consists in noting the contractions of an excised segment of intestine suspended in Ringer's solution when adrenalin is added. It is extremely delicate. Elliot tests the rise in blood pressure in a cat whose brain and spinal cord have been destroyed. Zanfrogani has devised a colormetric method. It is not however very delicate. The other methods serve to show the presence of adrenalin in a dilution of one to two or one to four million with the exception of the Meltzer-Erhmman reaction which is somewhat less delicate. It is generally supposed that adrenalin causes an increase of blood pressure by acting upon the nonstrained muscular tissue but there is also evidence to indicate that it may act upon the sympathetic system, although Popeilski does not believe this. Adrenalin appears to have other qualities. It diminishes very greatly the carbohydrate tolerance and may cause the appearance of glycosuria. On the other hand the pancreas appears in some way to inhibit the action of adrenalin and if it is removed or diseased according to Meltzer the pupil of the eye is dilated by the instillation of adrenalin. Leowi

has therefore used this as a diagnostic symptom of pancreatitis. I have found it occasionally valuable. The gland also appears to have some influence upon the sexual glands. This however is a feature common to all or nearly all of the internal secretions. It is supposed also to have some determinative influence upon sex. According to Robinson the injection of adrenalin into guinea pigs produce eighty-four and three tenths percent of males in the progeny, of cholin ninety percent of females. He has also used the recognition of adrenalin in the urine as a test for the sex of the child. When it is present a male child may be predicted, when absent a female. These results need confirmation. Adrenalin also appears to have a detoxicating effect, Marie found that one tenth of a centimeter of a one to one thousand solution neutralizes fifty lethal doses of tetanus toxin providing the two are allowed to remain together for several hours in an incubator. It also serves to antagonize diphtheria toxin. The adrenal gland, perhaps more than any other of the ductless glands, is the seat of tumor formation, giving rise to hypernephroma. In these cases there is not often evidence of increased suprarenal activity. In one case that I saw in which there was a huge hypernephroma of the right kidney with metastasis to the lung there was an uncontrollable diarrhea for which no explanation was found at the autopsy. It is possible that as a result of the excessive secretion of the suprarenal glands the substance possibly adrenalin that causes contraction of the nonstrained muscle of the intestines produced excessive peristalsis and in this manner the diarrhea was brought about. It must be remembered however that Glynn and many others do not believe that hypernephroma is a tumor of the suprarenals but that it is probably derived from the tissue of the kidney.

The pituitary gland also for a long time enjoyed the reputation of being one of the useless relics bequeathed us by our ancestors. Just why this was the case is not very clear for apparently in the lower animals it plays no greater roll than it does in human beings and there is no evidence that at any stage of animal existence on the earth it was more important than it is at present. In this it is quite unlike the penial gland and to a certain extent unlike the adrenals or at least structures akin to the adrenals which in some of the lower vertebrates apparently are more developed than they are in the mammalia. The real reason is probably that it apparently had no function in human economy and therefore because its function was not ascertainable it was supposed not to functionate. Anatomically at least the posterior portion of the gland appears to be a continuation of the floor of the third ventricle and it was therefore supposed to represent the termination of the cerebrospinal cavity and indeed it was also called the filum terminal anterie. That it might be important was suggested by its position, deeply buried in approximately the center of the skull, well protected from external injury

and further guarded by being situated in a small bony pit which protected it anteriorly, posteriorly and below. It consists of three distinct anatomical portions. The larger, the anterior lobe being glandular in type, the cells arranged in columns and containing droplets of colloid material. The middle lobe seems to be a modification of the anterior lobe containing similar cells somewhat less regularly arranged. It is in close anatomical association with the posterior or nervous portion and consists chiefly of neuroblastic cells and their fibres and a few cells which apparently extend into it from the *pars intermedia*.

Much study has been devoted to the types of cells particularly the granula which they may contain and which are variably eosinophil and basophil. The proportion of these cells in the gland varies considerably in different pathological states and probably if we could study the gland in different stages of functional activity would, like the cells of the external secreting cells, also vary as a result of purely functional changes. At any rate it seems fair to state that at the present time the changes are in proportion of these cells are suggestive rather than of any definite significance.

Much study has also been devoted to the functions of the gland. This has taken three lines. First the changes in the animal economy which have been produced by artificial destruction of the gland in various members of the animal kingdom. Second the effects produced by injection of various portions of the gland in different animals and in human beings in certain pathological conditions supposed to be due to disease of the pituitary gland itself. This observation of the changes in the gland in association with certain well defined clinical conditions.

In regard to the first two I may state at the outset that a very curious and somewhat paradoxical state of affairs is found to exist. Premising that experimental extirpation or destruction of the different parts of the gland leaving others intact is an exceedingly delicate operation and rarely to be carried out with such precision that the conditions of scientific experiment are fulfilled. It may be stated that as a general rule the extirpation of the posterior lobe is without any marked effect but the extirpation of the anterior lobe especially in young animals is followed by a very definite train of changes some of which are so severe that they may lead to death. On the other hand the injection of extracts of the anterior lobe produces very little, if any results excepting in certain pathological conditions of the gland to which reference will be made later. Whereas the injections of extracts of the posterior lobe contain definite substances particularly the blood pressure raising substance which apparently acts not only upon the muscles of the blood vessels but also upon other muscles particularly those of the uterus and may also act as a hormone stimulating secretion of certain other glands especially the mammary. The knowledge of the pathology of

the gland commenced as recently as 1886 when Marie who first announced that it was recognized acromegaly as a disease associated with tumors of the pituitary body.

The histology of the hypophyse and the glands intimately associated with it is by no means fully worked out. For instance we do not know definitely either the source or nature of the greenish yellow pigment found in the neuroglia fibres of the posterior portion of the gland. This pigment increases with age and may as Cohn suggests be either a secretion or an absorption and he inclined to the former view. It stains well with neutral red, iron and hematoxylin. Sulphuric acid turns it black. It is not soluble in alcohol nor ether and does not give the reaction for iron. Haberfeld has described a curious structure found only in the fetus consisting of a wall of gliacells surrounding a cavity lined with epithelium.

Much study has been devoted to the pharyngeal hypophyse. This appears to be found fairly constantly when sought. The cells according to Pende, Chittelli and others, at least in later life, resemble those of the hypophyse. According to Arena it undergoes involution with advancing age. Staderino and Perna have studied the eminentia saccularis but without reaching definite conclusions. The route by which the secretion of the hypophyse enters the body has also been a matter of some interest. I have already spoken of the relationship of the infundibulum to the third ventricle. Its appearance suggests at once the possibility of the discharge of the secretion into cerebrospinal fluid. Such a secretion would of necessity filter through the pars nevosa and its accumulation there might possibly give rise to the active physiological qualities of this tissue. There is of course nothing in the infundibulum that in any way resembles a glandular duct. Cushing and Goetsche nevertheless are quite impressed by the likelihood of this route and have even by careful inspissation of the cerebrospinal fluid been able to obtain a syrupy liquid, the injection of which caused a rise in blood pressure. Their experiments have been questioned, however by Carlson and Marie who upon repeating them were unable to obtain the same results. Eddinger on the other hand claims to have found a pericellular space around the cells which communicate with the perivascular lymph spaces and unites the hypophyse with the infundibulum. It is through these spaces according to him that the secretion escapes. This view is more or less supported by the observations of Herring who in the elasmobranchs find that the secretion of the hypophyse is obviously emptying into the blood vessels. In these animals there is no reason to suppose that a hypophyseal secretion is poured into the ventricles of the brain. Jacobi, however, to a certain extent supports the view of Cushing. His view is based largely upon some experiments relating to hyperthermia. This he finds is produced by injury to the walls of the ventricle but may be prevented under these circumstances by injec-

tions of the extract of the hypophyse. He believes therefore that substances derived from hypophyse enters the third ventricle and also two glandlike structures in the choroid plexus and so act on the circulation of the brain and regulate the temperature. It is needless to say that these observations cannot be accepted without more complete and certain control tests.

The functions of the pituitary body are still at best very obscure. That it influences the growth there can be no question. In some mysterious way it may enormously accelerate growth leading to the production of giants or to various types of local gigantism such as the enlargement of the peripheral bones in acromegaly, or splanchnomegaly that occurs in pituitary disease in children. It also, or at least the absence of its functional activity may produce a condition resembling infantilism, that is failure of development, entire lack of sexual development and apparently a tendency to the accumulation of fat. It also, although this is more doubtful, may influence the nutrition of the bones giving rise or at least predisposing to osteomalacia and possibly rickets and it seems to be associated in some illdefined way with Paget's disease of the bones. Furthermore it is possible that the pituitary is associated with that curious precocious type of senility known as progeria. How these relations are brought about is not clear. Schaffer believes that the anterior lobe secretes hormones which have to do with the growth of the skeleton including bones and connective tissue, but it is quite obvious that such hormones have never been isolated in the same way that the hormones that stimulate the secretion of the pancreas have been produced for experimental purposes. It also effects, but not in the way of influencing growth, the nonstriated muscles. This takes the form of active but transient stimulation. To this is probably due its blood pressure raising functions. Hamberger as a result of some experiments performed at long intervals and giving similar results is inclined to believe that it produces also a depressor substance, but his work is contrary to that of other experimentors. It effects also the nonstriated muscles of the uterus, intestines and bladder and it is particularly with reference to this function that the therapeutic use of the gland has been developed. It has a distinct influence upon the secretion of the urine, apparently diminishes it, due as Schaffer believes to some dilating action upon the blood vessels of the kidneys. At any rate as the blood pressure rises the kidney secretion seems to diminish. Polyuria is a frequent symptom in pituitary disease. It influences very distinctly the carbohydrate metabolism appearing when active to diminish the sugar tolerance and even in acromegaly to produce glycosuria. When, however, the secretion of the gland becomes less active than normal the sugar tolerance is distinctly increased often considerably above physiological limits. It bears some illdefined relation to the other internal secreting glands. When active the sexual glands are increased in

activity as in the early stages of gigantism and occasionally in acromegaly although in the latter disease the sexual functions are as a rule depressed. In women its extract stimulates the secretion of the mammary gland but disease of the hypophyse is usually associated with ammenorrhoea.

Some studies have been made upon the metabolism in general. An injection of extract of the gland causes an increase of the excretion of phosphorus and probably also of calcium and magnesia, although Mochi and Franchiner and Rubenraut have reached somewhat contradictory results upon these points. Cushing has called attention to the emaciation which is produced in animals after injections of the gland substance are continued for a considerable period of time.

The results of extirpation of the pituitary body have produced some contradictory results as Staderino suggests probably because the operation is so difficult that it is rarely perfectly performed but on the whole especially the case of later experiments, particularly those of Cushing and his associates and others have been fairly uniform premising that the operations are done on young animals and others of the same litter are used as controls. The number of experiments now extend into the thousands. Many of them gave no results owing to the early death of the animals and in those that survived there is almost uniformly an increase of weight due to the deposit of fat. There is very slow growth, persistence of the infantile type and almost uniformly a failure of the sexual glands to develop. Indeed the ovaries and testicles appear to undergo atrophy with loss of all functional capacity. In the animals that survived only a few days Crowe and Cushing observed a gradually developing coma, some spasmodic phenomenon in the muscles and polyuria. According to Cushing these results are due solely to the removal of the anterior lobe. Removal of the posterior lobe produces no symptoms. Bolesko believes that simple section between the anterior lobe and the infundibulum will produce the same results as the removal of the anterior lobe and he ascribes this to the blocking of the secretion. If his statement is true it would be impossible to remove the infundibulum without producing all the symptoms of cachexia hypophysioprevia but Cushing's experiments contradict this conclusion and it is further contradicted by the fact that implantation of the hypophysis in other organs may delay very considerably the appearance of the dangerous symptoms suggesting that the secretion must be readily absorbed by the blood vessels that penetrate the gland no matter what its situation. These symptoms of cachexia have not been found by all investigators. Handlesman and Horsley have failed in monkeys to observe a cachexia even with total extirpation of the gland and some of the animals remain apparently in good health for long periods. As Horsley's experiments were comparatively few they are hardly sufficient in spite of his

distinguished authority to contradict the results obtained by others, but it must be remembered that in all this work the conditions of scientific experiment are difficult to maintain. The results of transplantation are somewhat less certain. Exner has performed this experiments in rats and states that compared with controls the animals grew more rapidly, the longer bones increased in length and there was an increase in fat. The effects are very transient due, as examination shows, to the fact that the fragments are rapidly absorbed. Aside from the degeneration of the sexual gland there is a single observation by Alezais that degeneration also occurs in the neuclei of the liver cells. While it is comparatively easy to classify the clinical conditions which result from disease or injury of the pituitary gland, it is exceedingly difficult in the majority of specific cases to recognize those cases in which there is purely a hyper or purely a hypo activity of the gland itself. On purely theoretical grounds we can recognize four distinct conditions. These are first hyperactivity of the gland in youth giving rise to gigantism. Second in adults giving rise to acromegaly. Third deficient activity in youth giving rise to infantilism. Fourth in adults to adiposity. In addition Gifford has described a very curious post-natal abnormality to which he has given the name of progeria and Keith has recently described a skeleton in which he was able to demonstrate changes in the sellaturcica that suggested that the pituitary gland was at least in part responsible. Theoretically in cases of gigantism due to hypersecretion of the gland we should have a low tolerance for sugar and probably a considerable degree of physical strength. Cushing has described such a case which subsequently developed symptoms of acromegaly, but in the majority of cases as for example those described by Lemos, Mossi, Sobbi and Sarteschi, the increase in size has been associated with sexual infantilism and in Cushing's most remarkable case the same thing was true. It is not in place here to attempt any description of acromegaly. The literature upon the subject is now extensive. The condition is as well known that we recognize it in what the French are fond of calling *la clinique de la rue*. Indeed in Philadelphia there is a remarkable case in a policeman who has been able to attend to his duties as one of the traffic squad for years and in an iceman who has delivered ice at the University Hospital for a considerable period of time. He escaped being an inmate of that institution, however. That the hypophyse is directly associated with acromegaly may now be regarded as established. Such studies as these Contanini who reported collected cases without any changes in the gland or cases in which there were changes in the gland without signs of acromegaly, may be regarded as of no importance. Usually the growth is described as an adenoma which would account for the hypersecretion by which various other forms of degeneration may occur. In the majority of cases there is loss of sexual power in the

male or an early menopause in the female. Angioneurotic symptoms are occasionally observed as in the case of Rotky. The so called adiposogenital syndrome is not uncommon and indicates that some function of the gland is deficient. Eosinophilia has been observed. Persistent thymus is not uncommon. Occasionally there is an associated condition suggesting partial Graves' disease. In one case changes were found in the adrenals. Many of the viscera are enlarged, that is to say there is a splanchnomegaly as well as an acromegaly. In one case there was hypertrophy of the right half of the tongue and face and atrophy of the left half associated with the bony changes and enlargement of the larynx, liver, pancreas and thyroid gland. Harbitz who reported this case was so impressed by the multiple changes that he concludes that a single organ is not the cause of acromegaly. The various symptoms of brain tumor, somnolence, etc. are common. These relate rather to the structural than the functional changes in the gland. Haberfeld calls attention to the frequency with which the craniopharyngeal canal remains patulous. Satti to the irregularity in the thickening of the skull. Numerous cases have been reported in which there was a discharge of the cerebrospinal fluid and I may give notes of the following case now under my care. A woman 33 years of age has had for some years about once a week a profuse discharge of fluid from the nose often amounting to a pint or more in twenty-four hours. This fluid contains mucin, albumen and a sugar reducing substance. When the discharge occurs there is considerable thickening of the mucus membrane. The discharge is accompanied but not preceded by severe headache. For about a year she has had complete amenorrhea, although she is not losing weight and seems in other respects robust. There has been a steady contraction of the visual fields. The blood picture is that of status thymico lymphaticus, leukopenia with a relative lymphocytosis. There have been no changes in the bones of the face or extremities. Several x-rays taken of the head show a normal sella turcica. The discharge of fluid contained some elements found in the cerebrospinal fluid. The amenorrhea, the contraction of the visual fields, the blood picture all suggest very strongly some disturbance of the glands of internal secretion, particularly the hypophyse. It is perhaps too early for further changes to have occurred. Several cases have been described in which multiple fibromata or neurofibromata of the skin have been observed in association with acromegaly and Wolfsohn has suggested that intracranial neurofibromata might be responsible for the acromegalic symptoms (von Recklinghausen's disease). It appears according to Marek that upon careful observation changes suggestive of hyperpituitarism may occur during pregnancy, possibly because of the enlargement of the gland which has been sometimes observed in this condition and probably analagous to the enlargement of the thyroid. Marek reports a case of primapara in which the acrome-

galic signs became quite pronounced but subsequently disappeared after delivery. Of late much has been added to the treatment but purely in the line of operation. Many of the operations appear to have been reasonably successful. The danger is great but not as great in the majority of cases as the danger of the disease and therefore considerable risk is justifiable. Even if the disease is not cured in some cases distinct retrogression has occurred, for illustration of which I can refer you to Cushing's work on pituitary, the relief of headache, choked disk, etc. have commonly ensued and makes the operation worth while. I have neither the technical knowledge nor the time to attempt to describe any of the numerous operations and their modifications that have been devised for the purpose of reaching and extracting the hypophyse. Every surgeon believes his own method the best and probably in his hands is the best for him to use. There seems to be a general agreement that the treatment of acromegaly with glandular extracts is futile. Why this should be is not clear to me because in many cases there are signs that point strongly to deficient secretion of the gland. Beclere who is an enthusiast believes if the x-ray in all sorts of conditions believes that he has used it with advantage in these conditions. Fisher believes that the omission of operation in any case must be regarded as an error in treatment. If the symptoms of acromegaly are confusing far more so are those of the so called dystrophia adiposogenitalis. In addition to the increase in weight the nonoccurrence or loss of sexual functions there have been observed rickets, various anomalies of growth such as cleft palate, hair lip, deficient mentality, polyuria, the feminine type of hair distribution as in a case described by Hewlitt, polyuria, tachycardia, high degree of tolerance for carbohydrates, then according to Cushing a febrile response to an injection of a decoction of the dried anterior glandular substance. In one case under my care at the Presbyterian Hospital, a woman enormously fat who showed no sugar in the urine after the administration of over 300 grms. of glucose, (larger doses produced vomiting), this injection produced no febrile reaction whatever. Sometimes, as the case reported by Hoppi, these patients show a very rapid growth in childhood and develop their signs of infantilism later. In others as in a case reported by Gallais there may be enlargement of the hands and feet without other signs. In a case of a dwarf reported by Aschner which simulated infantilism pregnancy nevertheless occurred. It would seem that in these cases the administration of the glandular substance would be of benefit. Apparently it has rarely been employed. Lyonet and Laccagne report no benefit. Coppez in one case a man of twenty-one reported some improvement.

Progeria is a rare condition. According to Keith only four cases have been described, the first by Jonathan Hutchinson. There is extraordinary hypoplasia of the bones of the face and particularly

of the maxilla. The subjects of this condition appear like old men and women before they reach the age of twenty and have all the usual characteristics of old age. They remain small. In the case he describes the pituitary fossa was much smaller than usual suggesting a coincident hypoplasia of the gland. Although extract of the pituitary gland appears to be of very little value in case of disease of the gland, of late years particularly since the careful investigation of its physiological action by Frankl-Hochwart and Froehlich it has found extensive employment. In a very cursory examination of the literature for the last year I have found no less than fifteen references to its employment for the purpose of stimulating uterine contractions during parturition. It appears that it had very little influence in producing uterine contractions but if they already exist it may strengthen them greatly, if they have temporarily ceased it may restore them. There are apparently no unfavorable reports. It is also used to control post partum hemorrhage. If used in very large doses it may according to Schmidt produce asphyxia of the child and it has been noted that it increases the duration and severity of the after pains. Various preparations have been devised but they all appear to be derived from the infundibulum. The effect of the glandular substance according to Frankl-Hochwart and Froehlich is not alone to the uterus but all the unstrained muscles except the arteries of the kidneys and even of the intestines. Aarons, indeed, states that it may not be without danger as it causes degeneration of the blood vessels in the same way as does adrenalin at least experimentally. Houssay has isolated a crystalline substance from the extract of the pituitary which is strongly diuretic and also if injected beneath the skin produces an evacuation of the bowels in from ten to twenty minutes. This observation, at present, lacks confirmation. Frankl believes that the diuretic effect is greater than the diuretic effect of any other substance. Williams finds it of value in typhoid fever, pulmonary tuberculosis, heart weakness, after influenza, shock, insomnia, Graves' disease, paralysis agitans and finally to increase the tone of the uterine muscles. He uses two to five grains of the extract. Osteomalacia has been treated by Klotz and Koch with favorable results and Bergmann obtained improvement although he does not say or what kind in three cases of imbecility.

Probably no gland in the body causes a greater amount of dispute nor is there any concerning which we have so little precise and definite information than the thymus. This is not due to lack of literature on the subject. The amount that has been written is enormous and the industrious Hammer seems willing and anxious to abstract and criticize all of it. Indeed he seems for some years to have devoted his entire attention to this particular organ of the body. The questions chiefly at issue are these. First does the thymus play an important role in intrauterine life and if so what is this

role? Second does it under normal conditions play any role in extrauterine life? Is its persistence of any more significance than the persistence of the other lymphoid structures of the body and does it of itself or in connection with these other lymphoid structures actually predispose to sudden death or are they merely the expression of some unlikely condition to which the symptoms and danger are really due? Third can it produce dangerous symptoms in a purely mechanical way. Fourth what relation does it bear to the other ductless glands of the body either in health or disease.

In answer to the first question we are forced to seek information chiefly from anatomical data and influence. It cannot be said that anything definite is known but the fact that the thymus is certainly large at birth and seems then in its most active functional state. If we may judge from its physiological structure it is fair to assume that whatever this function is, it is connected in some way with the growth of the body but whether it accelerates or retards the growth is by no means clear. The single point that may bear upon this is that its persistence in extrauterine life seems to have a retarding effect. Experiment is impossible and no definite pathological effects have been observed. There seems now to be a considerable tendency to accept a steady growth of the thymus after birth but whether this growth continues until puberty or according to Sokoloff or for only a few years according to Olivia is a matter of dispute. Hart for example believes that the period of maximum development is at the end of the second year, that the gland then remains stationary until puberty and subsequently gradually atrophies. Hohlfeld attempts to reconcile some of these discrepancies by stating that the thymus of all glands is most affected by the general condition of the patient being very much smaller in cases of emaciation. Therefore collective data which do not take this fact into consideration are of very little value. Schridde thinks that the rapid disappearance of the eosinophil cells after birth, they are at their maximum during the seventh month of pregnancy is suggestive of a cessation of functions. Comparative studies appear to be of little value. According to Salkino, Maximo and Levin, the thymus gland of the lower animals show no essential difference from those of human beings and their studies have added nothing to our knowledge of the physiology of the subject. Levin supports Hohlfeld by showing that in experimental starvation the cortex of the thymus rapidly atrophied. Kallmark, however, concludes from his experiments that during fasting the thymus aids in the production of lymphocytes. Stendee and Reigel have obtained the thymic acid and Jigache and Worms believe that the secretion of the thymus is a special colloid substance. Hornowski is inclined to regard the thymus as an inhibitory organ particularly with reference to the development of the sympathetic system, the chromophil tissues being the stimulants. He describes a series of symptoms lessened resis-

tance, low blood pressure and diminution and vagus inhibition which he ascribes without much reason to over action of the thymus. The solution to the question of influence of the thymus in extrauterine life has been sought in two ways, first by experimental extirpation in the lower animals. Matti for example describes a well characterized picture of thymicoprevia in young puppies. The bones showed changes of rachitis, spontaneous fracture may occur, muscles are weak and in part atrophied and there is apparently hypertrophy of the chromaphil system. There is also atrophy of the thyroid gland and of the pancreas, but the changes in the hypophyse were variable. Not in all cases were these changes found. Vincent and others have found that the thymus is not indispensable to life in frogs, in guinea pigs and that dogs can live for a long time after extirpation, but Nordman has found that in these dogs there is usually an enormous dilatation of the heart and Klose and Vogt describes a series of changes lasting over many months to consist first of adiposity, second cachexia and finally death. In coma thymica they also find interference with the growth of the bones. It is a curious fact that some of the changes which follow the removal of the thymus are not altogether dissimilar from those found in human beings in whom the thymus persists, that is to say a moderate tendency to fat, imperfection in growth, some retardation of sexual development. There is also quite constantly a diminution in the number of leucocytes. It has occasionally but not invariably been found in the blood of animals in whom thymectomy was performed. The recognition of an enlarged thymus during life is a comparatively difficult one. Among the symptoms that have been described are dullness over the manubrium usually extending one or two centimeters to the left. d'Oelsnitz and Paschetta call particular attention to the assymetry of the sterno clavicular prominence. The superficial lymph glands are usually palpable. There is commonly associated enlargement of the tonsils and adenoids and after puberty, at least in males, there is a modification of the arrangement of the pubic hair and delay or even absence of the facial hair. In both sexes the axillary hair is apt to be scanty. There is also a number of signs which are in part largely due to pressure of the enlarged gland such as respiratory stridor, dilatation of the superficial veins of the neck, pulsation in the jugular fossa, edema about the eyes and supersternal retraction during inspiration. As a result of the pull exerted by the thyrio-thymic ligaments the area of dullness may be made to rise by bending back the head. It is also stated that in certain cases the tracheal stridor may be relieved by firm pressure in the supersternal notch. There is still much skepticism regarding roll played by the thymus in sudden death. Sokoloff believes that mors thymica does not exist or if it does is not due to the thymus hypertrophy it is only one expression of the underlying morbid condition. Pappenheimer fails to find any peculiarity in the histolo-

gical picture of this condition. Von Neusser recognizes no characteristic symptoms. He thinks, however, that when there is also enlargement of the spleen or peripheral lymph glands, hypoplasia of the genitalia and of the vascular system we may assume also some defect in the thymus. There appears to be, however, more agreement regarding the mechanical action of the thymus, a subject which I will discuss somewhat later. The results of the x-rays are indefinite, but in one case a boy of 15 showed all the so-called signs of status thymicus. Dr. Newcomet prepared a plate subsequently broken unfortunately in which a distinct shadow back of the manubrium appeared. Some very curious cases have been described such as attacks of suspended respiration with deep cyanosis, a child of four weeks who had convulsions and glycosuria and died of acute bronchitis, a boy of twenty that suddenly developed diabetes insipidus, blood changes of acute leukemia, fever, prostration and death. Various cases of sudden death after minor operations after the prophylactic injection of diphtheria antitoxin in all of which cases the finding of an enlarged thymus in the general hyperplasia of the lymphatic system seems sufficiently conclusive to the author but in most of which they would, I believe, be conclusive to no one else. In many cases the weight of the thymus is not given. In one in which the thymus weighed 70 grms. a recurring ascites and right hydrothorax, that is the signs of Pick's disease, were ascribed to it.

The third question can be answered more definitely. There appears to be little doubt that in some cases the thymus gland is capable of producing a degree of compression upon the trachea that will interfere with respiration and even cause death. S. Jackson has pictured such a case in which the invagination of the anterior wall of the trachea was very distinctly shown by bronchoscopy and the disappearance of this invagination after the operative removal of the thymus. The diagnosis of this condition is the diagnosis of enlarged thymus, plus attacks of dyspnea with an expiratory jugular tumor formation. Klose indeed believes that *mors thymica* is a mechanical condition largely due to pressure upon the trachea. The only treatment is surgical. He has operated many times with success. Among others who have operated are Koch, Cozzilino, Durch, Jackson and Haerttel. Schridde believes that this condition is rare. Indeed the latter believes that the thymus may exert injurious pressure upon the aorta and give rise to secondary hypertrophy of the heart the same condition found in thymectomized dogs. The relation of the thymus to other glands seems not to be very definite. Borchardt and Maron believe that the status thymico lymphaticus occurs in Basedow and Addison's disease. Melchior believes that it is present in 90 per cent of all cases of Graves' disease. Koch has operated upon two cases of exophthalmic goitre in both of which a large thymus was found. Sauerbach has even dared to perform thymectomy in a case of Graves' disease in a young woman who had

dullness over the sternum and to the left and 85 per cent of lymphocytes. The thymus weighed 49grms and eight months later patient reported distinct improvement. In a case of Banti's disease leucopenia has been noted and in one case recently under my care this leukopenia was associated with a marked percental increase in the lymphocytes. A better way perhaps would be to state that there was a leukopenia confined to a reduction of the polymorphonuclear blood cells. Not coming under any definite heading are two very curious observations, one by Stoerk, that most cases of gastric ulcer in men show signs of status lymphaticus, that is the feminine type of hair distribution, large follicles at the base of the tongue, lymphoid hyperplasia, etc. I have gone over my cases with a view of ascertaining if there were any basis for this statement and found absolutely no male cases with gastric ulcer that answered this description. They were rather invariably of a distinct masculine type. The other observation was made independently by Bartel and Miloslavitch. The former in 123 cases of suicides found that the aorta was narrower than the pulmonary artery and that the thymus and lymphatic apparatus were greatly developed. The latter examined 110 suicides and gives the following remarkable classification, a classification probably more minute than it is possible for the majority of investigators to utilize.

Status thymico lymphaticus 47 per cent;

Status lymphaticus 21 per cent;

Status thymio 8 1-2 per cent;

Lymphatismus 3 1-2 per cent.

That is to say 80 percent of the cases showed some manifestation of the so called lymphatic diathesis. Hammer criticizes these reports, that on the examination of cases dying suddenly about the same results have been obtained and it is unreasonable to conclude that there is any diasthesis for fatal accident. Miloslavitch attempts to explain the tendency to suicide in status thymico lymphaticus by assuming some deviation in the parenchyma of the nervous system or some connection between lymphatismus and abnormality of the psyche. Treatment of status thymicus is by no means satisfactory. In addition to surgery the x-ray has been advocated particularly by Cremieu and favorable results have also been reported by Rachford and Lange. The value of the thymus gland in therapeutics is somewhat doubtful. Nathan has found it beneficial in chronic arthritis, in three cases of which I used it according to his method, the symptoms were made very distinctly worse, that is there was more pain in the joints with less freedom of movement. Takaki has used it with reported benefit in carcinoma. The results were no more significant than diminution of the pain and delay of the growth, although it is difficult to understand how this could have been determined and in one case diminution of the pain and delay of the growth, although it is difficult to

understand how this could have been determined and in one case diminution in the size of the tumor. Experimentally Rohdenburg, Bullitt and Johnson have found that perhaps thymectomy apparently prevents the development of transmissible carcinoma in rats and mice. They have also obtained benefit in human beings including in one case a complete cure by the injection of extract of the thymus. The growth was inoperable and treatment therefore justifiable. In rachitis it has been tried without results. In chlorosis and Graves' disease variable reports have been obtained. It may be tried in cases of myxedema but just why it is not very clear because we already possess a very efficient remedy for this condition. The dose according to Castaigne Goroud and Parisot, is from two to twenty-five grams for a child and 100 grams for an adult of fresh calf's thymus. The dried preparation, five centi-grams for a child and five to ten decigrams for an adult.

The thyroid system is associated with some of the best defined clinical syndromes that are known to be related to the ductless glands. These may be grouped as 1st, those of anatomical change, sporadic and endemic goitre; 2nd, those of excess of function, hyperthyroidism and exophthalmic goitre; 3rd, those of deficient function, cretinism, myxedema, cachexia strumipriva; 4th, tetany, supposed to be related to the parathyroid, and to represent a deficiency of their action. Regarding these the only recent addition to our knowledge are the studies of McCarrison of India, upon endemic goitre, which he believes is an infectious disease, the infection being derived from the mud of the water tanks. Tetany, although it follows excision of the parathyroid, is also associated with other conditions and in its epidemic form may be infectious.

There seems to be little doubt that excision of the thyroids, if the parathyroids be allowed to remain, is a comparative innocuous procedure, but there are considerable differences in different species of animals. Hunt has offered some evidence that in exophthalmic goitre there is an excess of thyroid secretion in the blood.

Thyroid extract depresses the blood pressure, yet in exophthalmic goitre the blood pressure is usually high, due it is assumed, to over stimulation of the suprarenals. It is detoxication to certain substances, particularly aceto-nitrile and possibly morphine, and it is said to raise the opsonic index and therefore to enable the organism to resist infection; it stimulates the growth of the skeleton. From the time of Schiff, it has been the subject of experiment to a greater degree than almost any other part of the body; but some of the results are still disputed. Therapeutically it is the most used of all the internal glands, in goitre, myxedema, cretinism, obesity, chronic arthritis, rickets, osteomalacia, in alopecia, in early menopause, scanty menstruation, chorea. It apparently does harm in exophthalmic goitre.

Attempts have been made to prepare an antithyroid substance

chiefly for the purpose of treating exophthalmic goitre. Laacher uses the milk of thyroidectomized goats with fairly satisfactory results.

Roger and Beebe have used the blood serum of animals (hogs) immunized to goitre removed from cases of Graves' disease. Some of the results have been brilliant but they are unfortunately the minority. Three cases carefully treated by me under Beebe's directions seemed to be made worse in every respect.

Although Addison's disease may be regarded as the result of deficient suprarenal function, it must be remembered that some of its manifestations cannot be produced experimentally by removal of the suprarenals, particularly the pigmentation of the skin and mucous membranes. The intense muscular weakness, the low blood pressure, the increased carbohydrate tolerance, constitute the signs of the disease. In one of my cases two days before death the systolic pressure was only 50, nor was it raised by the intravenous and oral and rectal administration of adrenalin. Jaboulay has implanted dog's adrenals into patients suffering from Addison's disease. The ultimate results were observed by the prompt death of the patients. The therapeutic uses are manifold. Adrenalines used to produce local anemia of the mucous membranes, to check hemorrhage, to control menorrhagia, to control shock, to control the asthenia of infectious disease, especially diphtheria. Its use is not without danger.

VISCERAL SYPHILIS*

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A discussion of visceral syphilis usually concerns itself with the nature of the pathological process which occurs in the tertiary stage, yet it is not limited to this stage, as lesions of the viscera may occur in the secondary period.

We have been too accustomed to look upon the pathological manifestations of the various stages of acquired syphilis and those of congenital lues as rather distinct from each other. It is true that the well developed lesions present gross and microscopic differences. But one of the chief fruits of the study of syphilis, since the discovery of the parasite, has been the establishment of a common mode of origin for the chancre, the secondary syphilides, the tertiary visceral and vascular lesions, and the changes of congenital lues. In each case the immediate reaction to the localization of the parasite is the same, and only this primary reaction can be considered characteristic of syphilis.

The visceral pathology of tertiary lues characterized by diffuse connective proliferation in the parenchymatous organs, by discrete gummata, and by productive or nodular gummatous vascular involve-

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ment, does not differ in its primary essentials from the manifestations of the other stages of syphilis.

Our conception of the clinical history of syphilis has been greatly influenced by the recent contributions on the life history and action of the spirochete, as well as the more extensive knowledge of the results of the Wassermann reaction.

Syphilis starts as a local infection, and, according to the degree of local reaction and activity of the virus, remains localized for a longer or shorter period. After the spirochetes have broken through the first line of defences, there is a general invasion of the body. The dissemination of the spirochetes doubtless takes place largely through the blood stream during the last half of the primary stage and in the early secondary period.

With the blood from a patient at least three weeks before the outbreak of the secondaries, Hoffman¹ was able to induce a typical initial lesion in monkeys.

The generalization and visceral involvement is further demonstrated by the early reaction to the Wassermann test. Swift² has reported as his experience that all cases of syphilis react by the end of the fourth week after the appearance of the chancre.

All this suggests that syphilis is largely a visceral process and with the exception of the primary lesion, most of the clinical signs are but expressions of a systemic condition.

Visceral syphilis is usually an example of latent syphilis since it does not manifest itself for a long period, often years, after the primary lesion or last symptom of the infection.

The terms meta-syphilis and para-syphilis employed largely by neurologists in connection with tabes and general paresis, will probably soon fall into disuse, and the two affections referred to will be designated as syphilitic diseases.

Clinical evidence of visceral syphilis occurs more frequently in diseases of the liver or heart and blood vessels than of any other organs of the body. Of the general symptoms, fever of a septic remittent or intermittent type is not infrequent. The fever of visceral syphilis is frequently mistaken for malaria, tuberculosis, typhoid fever, or rheumatism. Gummata are usually the source of such fevers, and the fact that a gumma may spontaneously heal and disappear, and especially if the patient is put to rest, is not usually recognized.

Syphilis of the respiratory system and alimentary tract is comparatively rare.

Hepatic syphilis: The liver is the most common seat of visceral syphilis. It exists in two main classical forms, the syphilitic cirrhosis, and hepatic gummata. Syphilis of the liver presents a very varied clinical picture with prominent general symptoms in many cases, of which loss of weight is a marked feature.

The duration of the symptoms may be prolonged and there may

be periods of improvement. Fever is a common occurrence. In the majority of the cases, there are features suggestive of hepatic disease. Enlargement or tumor is the most common, and this may suggest other conditions, especially malignant disease.

One of the striking clinical features of this type of visceral syphilis, is its mimicry of other conditions, and of these may be mentioned gall stones, cholecystitis, abscess and carcinoma of the liver, pulmonary tuberculosis, typhoid fever, malaria, pyelophlebitis, echinococcus cyst, splenic anemia, hepatic cirrhosis, and movable kidney.

The following two cases are presented as examples:—

Case No. 1. Male aged 46 years. Under observation three weeks. Duration of symptoms four years. Enlarged liver; loss of weight; distress and fullness in upper abdomen. Wassermann positive. Clinical diagnosis—syphilitic cirrhosis.

Admitted to the Iowa Methodist Hospital April 3, 1913. Patient is a man 46 years of age, merchant, married six months; family history negative. As a child had measles, mumps, and whooping cough. No swelling of lymph glands or history of sore throat.

In 1902, or 11 years ago while living in Arkansas, had a malaria infection of four months duration. One year later in 1903 contracted a luetic infection, having a primary lesion on the external genitals. Received potassium iodide for a period of six months. At no time had any cutaneous eruption, sore throat, or loss of hair.

Two years later, or nine years ago, passed through a Neisserian infection.

Has been a moderate user of alcohol and tobacco, but has never used either in excess.

The present illness began four years ago, as a distressing pain in the upper abdomen, being more marked on the right side, extending up towards the right shoulder region. This continued more or less ever since, frequently confining him to bed several days at a time. During the past six months his painful distress in the upper abdomen and lower portion of the right chest has been more marked. The pain is often of a stab-like character extending through to the back, causing a marked dyspnea with exertion. Lying down, coughing, quick movements or jars aggravate the painful condition.

The patient has been annoyed by a feeling of fullness over the stomach region, has occasional belching and sour eructations but has never vomited. Appetite is impaired. The bowels are moderately constipated; there is no history of diarrhea, jaundice, or swelling of the limbs.

Since the beginning of the illness four years ago, he has lost 17 pounds in weight.

The present condition reveals a man in a fair state of nutrition; temperature, pulse and respiration normal. No icterus, cyanosis or edema. Pupillary reactions normal. The tongue, mouth, and throat do not reveal any special change. There are no enlarged lymph

glands. The chest is symmetrical with equal and good expansion. The lungs are normal. The heart is not enlarged, and the sounds are not abnormal. Systolic pressure is 120 mm.

The abdomen is distended in the upper portion, evidently due to an enlarged liver. The liver is palpable 12 cm below the costal margin, the edge being rounded, the surface slightly irregular and indurated. The left lobe is more prominently palpable than the right. The spleen is palpable at the edge of the left costal border. Ascites is not present.

The analysis of gastric contents extracted after an Ewald test meal revealed no food other than given, amount 70 cc. No free or occult blood. No mucus. Free hydrochloric acid 15, total acidity 50, combined 35.

Examination of contents 15 hours after giving a motor meal revealed no retained food. The urine findings are normal. The blood count was as follows. Hemoglobin 65 percent (Sahli), red cells 4250000, leucocytes 14000; differential count—polymorphonuclears 60 percent, lymphocytes 37 percent, large mononuclears 3 percent.

Wassermann test was distinctly positive.

In the differential diagnosis an alcoholic cirrhosis, carcinoma of the liver, and syphilitic hepatitis or cirrhosis were considered.

The absence of ascites, marked gastro-intestinal disturbance, and cachexia excluded the first two, while the history of the primary luetic infection, enlarged firm liver, and positive Wassermann reaction made a diagnosis of syphilitic cirrhosis most logical.

The patient received .6 gram of neo-salvarsan, following by a course of gradually increasing doses of potassium iodide, at present taking 150 grains a day.

During the two weeks that he remained in the hospital the improvement was very striking, in that the liver was reduced in size, and there was a marked relief from the distressing dyspnea and localized pain. Reports from the attending physician state that this improvement is continuing.

Case No. 2. Woman 33 years of age. Illness of three years duration, irregular fever, enlarged nodular liver, splenic tumor, no ascites, moderate jaundice. Clinical diagnosis—gummata of the liver.

The patient was seen with Dr. Charles Ryan of Des Moines on Oct. 4, 1911. She was a married woman with no children. The family history was negative. During childhood the patient had several attacks of malaria and was told that she had an ague cake spleen. Her health remained good until eight years before the first examination, when she began to have periodic attacks of fever of three to seven days duration, accompanied by nausea and vomiting and diffuse pains in the upper abdomen. These attacks averaged three or four each year. She gradually noticed a darkening of the skin over the entire body, especially in recent years. During the last four years the patient lost about 30 pounds in weight.

The patient has noticed for sometime a "lump" in the stomach region, and she believes that her digestive disturbance and local discomfort is due to the pressure of this tumor.

At the time of the examination the patient presented a distinct pallor of the skin, tinged with an icteric or bronzed hue. No enlarged glands. Heart and lungs were normal. The abdomen revealed a marked prominence of the epigastric region, which upon palpation proved to be a well defined dense tumor mass, movable with respiration. This tumor seemed to be continuous with the splenic area of dulness and was mistaken for an enlarged spleen. The liver was palpable 8 cm below the costal margin, the surface and edge being hard and irregular. Ascites was not present.

The gastric analysis revealed a total acidity of 70, free hydrochloric acid 50, combined acid 20. No mucus. No occult blood. The urine findings were normal. The blood examination gave the following result: Hemoglobin (Tallquist) 80 percent, red cells 3640000, leucocytes, 12600. Differential count—polymorphonuclears 70 percent large lymphocytes 20 percent, small lymphocytes 4 percent, large mononuclears 4 percent.

The Wassermann test was positive.

A diagnosis of hepatic and splenic syphilis was entertained, but in view of the apparently enlarged spleen, marked secondary anemia, and moderate degree of icterus, the thought of a splenic anemia was more prominently considered.

As the greatest discomfort of the patient was the pressure disturbance in the epigastrium due to the enlargement in the splenic region a splenectomy was advised, to which the patient consented. At the operation performed by Dr. Ryan, a very unusual change was recognized in the liver, in that it was greatly deformed by a number of deep cicatricial constrictions which separated the right lobe into a number of irregular nodular lobulations, and the left lobe was separated from the remainder of the liver by such a deep constriction that it almost seemed a structure by itself. It was this deformed left lobe that had been mistaken for an enlarged spleen. While the spleen was about twice the normal size, it was crowded back into the left hypochondrium and was evidently not the disturbing element in the case.

A diagnosis of gummata of the liver with the characteristic results was the natural conclusion, and the operation was discontinued. As soon as the patient was sufficiently recovered from the operation, a course of mixed treatment in the form of potassium iodide and hypodermic injections of bichloride of mercury was instituted. This soon produced a marked improvement in the condition, the gastric discomfort disappeared and the liver appreciably decreased in size. This treatment has been kept up at alternate periods ever since, and the patient today enjoys a very fair state of health.

A Wassermann test made recently gave a negative result.

Cardio-vascular syphilis:—The virus of syphilis seems to fall with unusual severity on the heart and blood vessels, the following pathologic forms being recognized.

1. An acute gummatous endarteritis of vessels of medium size and sometimes of larger ones of the brain and also of the aorta. In this form perforation may take place in the arterial wall and when it involves the aorta results in sudden death.

2. Obliterative endarteritis involving small vessels especially the coronaries, the vessels of the brain. The condition of this coronary arteries frequently results in fibrous myocarditis and development of heart inadequacy, and with anginal attacks in the young. Sudden death may supervene.

3. Syphilitic arteritis usually confined to the larger blood vessels, and especially to the root of the aorta and manifested by the easily recognizable changes in the intima and media. This condition has been made specially familiar, and its connection with syphilis emphasized by the studies of Marchand³, Benda⁴, and Chiari⁵. It is referred to as a mesaortitis, and is a common cause of aortic insufficiency.

Gumma may occur in the heart wall and interfere with the conductivity of the muscular fibres. It may appear in the bundle of His and cause heart-block.

The following three cases are cited as examples:

Case No. 3. Male, age 37 years, under observation two weeks; Dyspnea and swelling of the limbs about six months. Positive Wassermann. Clinical diagnosis—syphilitic myocarditis, myocardial insufficiency. Passive congestion of liver and kidneys.

The patient is a painter 37 years of age, admitted to the Iowa Methodist Hospital February 19, 1913, complaining of shortness of breath, cough, and swelling of the limbs.

The family history is negative. Had measles at 12 years of age, no other illness until at 20 years, when he contracted lues. After the secondary eruption had developed he went to Hot Springs, Arkansas, where he remained forty days, taking one bath each day and some medical treatment. At the end of this course of treatment all symptoms had disappeared so that he was pronounced cured, and has taken no medicine since.

Has been a moderate user of alcohol and tobacco. Is a heavy meat eater. Does not use tea or coffee.

Upon close inquiry patient admits that he has experienced some shortness of breath upon exertion for a number of years, but in September 1912 he became quite ill with a cough which he regarded as a cold, but he soon became very short of breath, and the cough increased. Expecterated small amounts of blood, but otherwise had no sputum. The dyspnea soon compelled him to sit up in a chair all night, his heart's action becoming very labored and irregular. At the end of the seven weeks his legs and feet began to swell, remain-

ing so for six weeks, when the edema gradually subsided. During this time he kept on his feet and did not take any medicine.

The edema reappeared within the past two weeks, and the dyspnea is accompanied by a sense of constriction in the chest and some precordial pain.

The present condition is that of a medium stout man weighing 150 pounds, of good nutrition. The facial expression is anxious. Skin is cold and moist with some cyanosis. No eruptions. Marked edema of the lower extremities to the knees. Pupils react to light and accommodation. The mouth, tongue, and throat are normal in appearance. A few posterior cervical lymph glands are palpably enlarged. Thyroid is normal. The chest is symmetrical, of fair expansion, the lungs are clear. Breathing is broncho-vesicular, with numerous moist rales heard over the lower lobes posteriorly.

The precordium bulges slightly, a diffuse apex beat is visible and palpable in the 5th interspace 13 cm from the midsternal line. A thrill is not present. The percussion area of the cardiac dullness places the upper border at the 3rd rib, right border 3.5 cm from the mid-sternal line, and the left border 14.5 cm from the mid-sternal line. Upon auscultation a faint systolic murmur is heard over the apex region and transmitted over the chest area. The sounds are weak, and the beat very irregular; the pulmonic second sound is somewhat accentuated. The liver is moderately enlarged, and very sensitive to pressure. Spleen is not enlarged. Ascites is not present.

The gastric analysis did not reveal any abnormal changes.

Blood—hemoglobin 70 percent (Sahli), red cells 4100000, leucocytes 10400; differential count—polymorphnuclears 60 percent, lymphocytes 35 percent, large mononuclears 5 percent.

Urine—24 hour amount, 1200 cc, acid, specific gravity 1012, 2mm contact ring of albumen. No sugar. Sediment reveals a few hyaline and granular casts.

Wassermann test distinctly positive.

In view of a preceding luetic infection and absence of previous cardiac, renal, or arterial disease, with the positive Wassermann reaction, a diagnosis of syphilitic myocarditis was rendered.

A course of mixed therapy was instituted, but after a week's treatment the patient was called to an adjoining state on account of the serious illness of a relative, and passed out of our observation.

Case No. 4. Male, 43 years of age, under observation three years. No history of luetic infection or previous cardiac disease. Duration of symptoms, eight months. Cough, dyspnea, precordial pain, edema of liver, extremities. Negative Wassermann. Clinical diagnosis—syphilitic aortic insufficiency, myocarditis, cardiac de-compensation. Exitus—no autopsy.

The patient is a stationary engineer, married, having two children and one grandchild all in good health. Family history is nega-

tive. Does not use tobacco or alcohol and only a moderate user of tea and coffee.

Denies any knowledge of a luetic infection. At the age of 22 years had a light attack of measles. For a number of years following had an attack of diarrhea each summer of two or three weeks duration. Ten years ago was vaccinated, at which time he was quite sick, having some fever. It was soon after this that he was told by a physician that he had a valvular disease of the heart. At the time he experienced some shortness of breath, and an irregular heart's action was recognized. Had no edema, and continued to work until two weeks before his admission to the hospital on Nov. 2, 1912.

His present illness dates from March 1912, at which time he had a brief illness resembling influenza, and since then he has not felt well. Has lost 20 pounds in weight during the past 8 months. While he has kept at his work, his strength has gradually failed; shortness of breath with all exertion. Appetite poor with occasional vomiting. Bowels constipated. During the past two weeks he was unable to work, the symptoms having all become more marked. Coughs considerable with a large amount of sputum. Sleep is disturbed by dyspnea and cardiac distress, and the lower limbs have become greatly swollen.

At the time of admission to the Iowa Methodist Hospital Nov. 2, 1912 the patient was pale, weak and dyspneic. The blood vessels of the neck pulsate actively; the thyroid is not enlarged. The radial pulse is irregular and accelerated; systolic blood pressure 110 mm, diastolic 80 mm. A diffuse pulsation is noted over the entire precordium; the apex beat is visible and faintly palpable in the 5th intercostal space 13 cm from the mid-sternal line. A presystolic thrill is noted over the apex area. The percussion area is widened, especially in the third and fourth interspaces, the right border extending 5 cm to the right, and the left border 14 cm to the left of the mid-sternal line. Auscultation reveals a diastolic murmur over the aortic area, a presystolic and systolic murmur over the apex region; the sounds are feeble and somewhat indistinct, the rate is accelerated and the arrhythmia is marked.

The cardiac findings suggest an aortic insufficiency, dilatation and hypertrophy of the left ventricle and auricle with associated relative mitral stenosis and insufficiency.

The lungs reveal numerous moist rales over both lower lobes indicating passive pulmonary congestion. The liver is enlarged and painful. Spleen is not palpable. Ascites is not present. The lower limbs are edematous to the knees.

Urine—acid reaction, specific gravity 1028, albumin present Esbach .3 percent, no sugar. Sediment reveals a moderate number of hyaline and granular casts. 24 hour amount 900cc.

Blood—hemaglobin 80 percent (Tallquist), red cells 4320000,

leucocytes 11200. Differential count—polymorphonuclear cells 64 percent, lymphocytes 34 percent, large mononuclears 2 percent.

Wassermann test negative—two specimens taken.

The patient was placed at complete rest, and an active course of eliminative treatment by means of elaterium and salines was instituted, with large doses of infusion of digitalis. Although an increase in amount of the daily output of urine, and a large number of watery stools resulted, the cardiac dilatation continued to increase. The murmurs became less distinct, a state of delirium cordis developed, and the signs of general venous stasis became more marked.

It was this lack of response to cardiac stimulation and absence of previous disease to produce valvular or myocardial disturbance, that forced a conclusion as to the luetic nature of the cardiac process. The patient was seen on Nov. 16th, 1912 by C. F. Hoover of Cleveland, who concurred in this diagnosis. At his suggestion a course of bichloride of mercury injections were instituted, but the patient succumbed to his illness five days later on Nov. 22, 1912, so that there was no opportunity of determining the result of the therapeutic test. Unfortunately an autopsy was not permitted.

Case No. 5. Colored male, aged 37 years, under observation two weeks, duration of symptoms four months. Severe anginoid attacks occurring daily—ten minutes to an hour in duration. Death during and angina attack. Autopsy findings:—syphilitic aortitis, coronary arteritis, amyloidosis of the spleen and kidneys.

The patient was a negro 37 years of age, a coal miner, unmarried. Admitted to the Iowa Methodist Hospital March 27, 1913. A definite family history could not be obtained except that the mother died at 33 years of age of pulmonary tuberculosis.

Measles, mumps and chicken pox in childhood. Two short fever attacks during his twenty-third year, one supposed to be typhoid, and the other malaria infection. Had an illness called rheumatism at 24 years of age, in which many of his joints became reddened, swollen and painful, compelling him to stop work, but did not confine him to bed. Since then has had slight light attacks each year, either in the fall or spring. Patient thinks that his heart was affected by the first attack, and attributed to this the discomfort about the heart region preceding the affection of the past year. Has had occasional shortness of breath after excessive exercise, but no swelling of feet or lower limbs at any time.

No digestive disturbance of any kind.

Five years ago had a Neisserian urethritis, the discharge subsiding after ten days with no recurrence since. Four years ago developed a chancre, which was treated locally and by internal medication, healing after four weeks, with no eruption or other secondary manifestations appearing at any time.

His habits are moderate as regards the use of tobacco, alcohol, tea and coffee. Has always been a hard worker.

The present illness began about Dec. 1, 1912 with severe pains over the heart and radiating to the left shoulder. The attacks were brought on by walking or excitement, and lasting until he would stop walking or become quiet. They were confined to the precordium for about one month, then the attacks after beginning over the heart would radiate to the abdomen and now (during the last few weeks) the pain is entirely confined to the upper abdomen, associated with a definite bulging which the patient says he can feel and thinks is a distended stomach, not affected by position nor accompanied with vomiting or constipation, lasting for hours as a rule, and accompanied with great dyspnea, distressing cough, and colored sputum. An attack, the 28th of March, lasted 4 hours and only then was quieted by two hypodermic injections of morphine, 1-2 grain doses. The pain has no relation to eating, yet large meals will generally bring on an attack in 10 to 15 minutes. The difficult breathing also started last December, and although it gives him some discomfort all the time it is much worse during the attacks of pain. Requires but one pillow in sleeping.

Of late has had several attacks each day, being brought on by the slightest exertion. Has required frequent hypodermics of morphine to afford relief. Urine has become scanty in amount and lately urination has become somewhat difficult. Thinks his weight has decreased about 20 pounds during the past six months.

Upon admission to the hospital the condition suggested great distress about the chest, with an anxious facial expression. Temperature normal, skin warm, dry and scaly, but no subcutaneous edema. Eyes—pupillary light reaction sluggish, no other ocular findings. Mouth—lips dry, tongue protrudes straight, coated, no tremor. Teeth and gums in fair condition. Tonsils slightly enlarged. Lymph glands—posterior cervical, axillary, inguinal, and epitrochlear glands palpably enlarged.

Chest—inspection—flat, symmetrical, expansion diminished, but equal on both sides. During painful attacks has Cheyne-Stokes type of respiration. Palpation—tactile fremitus normal. Percussion—normal resonance, lung border outlines normal. Pleurae freely movable. Auscultation—exaggerated vesicular breathing. Vocal fremitus normal. Few moist rales posteriorly over lower lobes. During Cheyne-Stokes breathing apneic periods are distinctly demonstrable.

Circulatory system—radial pulse irregular, equal on both sides. Rate 106. Wave low, vessel wall moderately sclerosed. Brachial systolic pressure 175 mm, diastolic 120 mm.

Heart—apex visible as a diffuse impulse, with maximum intensity outside nipple line in 5th interspace 13 cm from mid-sternal line. No palpable thrill. Percussion—upper border 3rd rib; right border 5 cm to right, and left border 13 1-2 cm to the left from the mid-sternal line.

Fluoroscopic examination reveals an elongated pear shaped

heart form, and a marked broadening of the aorta area. Auscultation—reveals a soft systolic murmur over the apex transmitted to the axilla. A somewhat harsher systolic murmur is heard over the aortic valve and beginning aorta area. The second pulmonic sound is accentuated and slightly precedes in time the second aortic sound.

Abdomen—rounded, symmetrical, well muscled. No bulging or visible peristalsis. Liver palpable and tender. Spleen not palpable. Epigastrium very sensitive. Spine—movable, no deformity or tenderness.

Extremities—fairly well muscled. No changes in the joints. Ulnae sensitive to pressure. Brownish scars over tibial region. Surface of both tibias distinctly notched.

Nervous system—all deep reflexes decreased. Cremaster and epigastric reflexes decreased. No Babinsky, no Romberg. No ataxia.

Gastric contents—total acidity 50, free hydrochloric acid 34, combined 16. No occult blood.

Urine—clear, acid, 24 hour amount 1200 cc., specific gravity 120. Albumin present—Esbach .2 percent, no sugar. Sediment contains moderate number of hyaline and granular casts.

Blood—hemaglobin 80 percent (Sahli), red cells 5530000, leucocytes 7200. Differential count—polymorphonuclears 64 percent, lymphocytes 32 percent, large mononuclears 4 percent. Wassermann (Dr. D. J. Glomset) faintly positive.

Sputum—thin, mucoid, tinged with blood. No tubercle bacilli, few streptococci and staphylococci.

Cerebro-spinal fluid—withdrawn by lumbar puncture. Moderate pressure. 60 cells per cmm. Differential count of 10 cells—red blood cells 6, polymorphonuclears 1, lymphocytes 3. Wassermann strongly positive.

Clinical diagnosis—syphilitic aortitis, atheroma of aorta and coronaries, myocardial insufficiency, relative mitral insufficiency, visceral venous stasis, angina pectoris.

Absolute rest treatment was instituted with increasing doses of potassium iodide, ten drop doses of tincture digitalis and saline laxatives. Morphia and atropia as required to relieve anginal attacks. The patient failed in strength, dyspnea became more marked and the anginal attacks continued with increasing severity. Considerable edema developed in the feet, ankles, and tibial regions, and the patient succumbed in a particularly severe angina attack on April 9, 1913.

Autopsy 20 hours—post mortem Dr. D. J. Glomset. Body of well nourished colored male. No scars. Brain and spinal cord removed. Macroscopically no abnormal change. Thorax, lungs, passive congestion; heart enlarged, hypertrophy of left ventricular wall; musculature appears normal; mitral tricuspid, and similar valves are normal. The aorta is dilated in ascending portion,

its intima marked by numerous flat nodular elevations varying in diameter from 5 to 10 mm. No ulcerations. One stellate scar in ascending portion. The orifices of the coronary arteries are involved in this same process. The entire ascending and transverse portion of the arch is involved by the above. Liver enlarged, passive congestion, fatty infiltration. Spleen amyloid. Kidneys congested, amyloid in cortical part.

Anatomical diagnosis, atheroma of aorta, aortitis, coronary sclerosis, congestion of the lungs, amyloid spleen and kidneys.

The evidently specific anatomic process was entirely confined to the aorta and beginning of coronary arteries, which in its selective character was indicative of a luetic infection.

Syphilitic nephritis is a recognized entity, occurring usually in the secondary stage. Amyloid kidney is of syphilitic origin, but gummas of the kidney are very scarce.

Case No. 6. Girl, aged 13 years, under observation two days. Duration of symptoms five years. Cervical lymph glands enlarged, fever, albuminuria, nocturnal periosteal pains, perforation of palate. Clinical diagnosis—syphilitic lymphadenitis, late congenital lues, syphilitic nephritis.

The case affords an example of the diagnostic errors liable when placing too great reliance on a negative family history, and the tendency to disregard the ever constant possibility of a luetic affection.

The parents of this girl are plain Iowa farming people of apparent good ancestry, to whom the suggestion of lues seemed impossible. There are six other children in the family, who are in good health. The patient enjoyed good health until her eighth year, when she began to complain of dimness of vision, which was associated with a conjunctivitis. This condition was diagnosed as a phlyctenular conjunctivitis of tubercular nature. She was taken out of school one year, health improved, and vision apparently returned to normal.

It was this suggestion of a tubercular process that misled the physician when four years later she required medical attention for several enlarged cervical lymph glands on the left side of the neck, being followed soon after by similar enlargements on the right side.

In view of the previous history this lymphadenitis was regarded as tubercular, and because of that the glands were removed by a surgeon of highest standing. Macroscopically the removed glands had caseous centers, but were unfortunately not subjected to a histologic or bacteriologic examination.

The operation was done in July 1911; a recurrence took place in that new enlarged glands appeared requiring a second operative removal one month later in the same year. About one month following this time, or in August 1911, I had an opportunity to see the little patient and fully endorsed the diagnosis of tubercular lymphadenitis.

denitis. At this examination the general condition did not reveal anything specially significant.

The patient again came under observation March 24, 1913, at which time the following history of her present illness was given.

In October 1911, or two months after my last examination, an offensive discharge from the nose developed, which was soon followed by the discharge of small spiculae of bone. Two months later in December 1911, a sore was noted in the roof of the mouth and soon passage of air was felt from mouth to nose, this opening or perforation of the palate having remained ever since, with more or less attending nasal discharge. During the last summer she began to have pains in the legs, which were most troublesome at night.

Lately a frontal headache has become very annoying, a puffiness of the face has developed, and occasional fever has been observed. Appetite impaired. No vomiting. Bowel function not changed. Has lost three pounds in weight during the past year.

In justice to the attending physician it should be stated that the parents during a long time treated the child at home, so that there was no opportunity to observe the unfortunate progress of the condition.

At the time of the examination March 24, 1913, the condition was in keeping with the history given.

The patient was pale and poorly nourished. The afternoon temperature was 101 2-5, pulse 110, respiration 28. Snuffles were noted on account of the nasal discharge. The pupillary reflex was normal. The nasal septum was intact, but a distinct perforation 1-8 inch in diameter extended through the palate or roof of the mouth, one inch behind the incisor teeth. A few enlarged submental and posterior cervical glands were palpable. No enlargement of epitrochlear or other palpable glands. The scapulae both presented a concave posterior border. Lungs and heart were normal. The liver and spleen were not enlarged. The lower extremities are unequal in size in that the left leg is enlarged—the left tibia being larger than the right and the anterior surface is rough and very painful.

Blood—hemaglobin (Tallquist) 70 percent, red cells 4950000, leucocytes 17200. Differential count—polymorphonuclears 70 percent, lymphocytes 25 percent, large mononuclears 5 percent.

Wassermann was distinctly positive.

Urine—acid, specific gravity 1012, albumin present in large amount—Esbach .6 percent—sugar absent. Sediment reveals numerous hyaline and granular casts, and a few red blood cells.

The clinical findings warranted the diagnosis of lues—probably of the delayed congenital type, with distinct visceral manifestations.

The anti-syphilitic treatment was promptly instituted by giving a primary dose of neo-salvarsan followed by a course of mercurial inunctions. Recent advices from the attending physician report a marked improvement in the fever, albuminuria and nasal dis-

charge. The palatal perforation will probably require some plastic treatment to promote its closure.

This case teaches a lesson to be ever on our guard—never to disregard syphilis in diagnostic consideration.

Diagnosis. In the diagnosis of visceral syphilis three essentials are to be considered.

1. Careful examination for any sign of past or co-existent syphilitic disease.
2. Presence of Wassermann reaction.
3. Inability to explain existing symptoms by any other applicable clinical condition.

As fever is most often seen in hepatic syphilis, differentiation is necessary from rheumatism, malaria, typhoid, tuberculosis and cholecystitis.

In analyzing the symptoms of cardio-vascular syphilis, it should be recognized that they are hardly, if at all, different from other forms of cardiac disease. Certain forms should excite suspicion.

1. Sudden failures of the left heart, as indicated by giddiness, fainting and failure of strength. A mitral leak coming on in men of middle age without any previous cardiac disease, or without evidence of renal or arterial disease.

2. Cases with features of angina pectoris at an age when angina is not usually found.

3. Cases with features of Stokes-Adams disease, fainting and convulsive attacks, slow arterial and a quick venous (jugular) pulse.

The value and limitations of the Wassermann reaction in medical syphilis should be recognized. While a positive reaction with few exceptions indicates the presence of a syphilitic infection, a negative reaction may be given in a case of healed syphilis, cured syphilis, and even active syphilis in some instances.

A brief resume of statistical facts may be in place here.

A positive Wassermann reaction occurs in over 90 percent of all secondary cases, in from 80 to 90 percent of cases in the tertiary period. In latent syphilis which includes many of the cases of visceral syphilis, a positive reaction is obtained in 50 percent of the cases. In congenital lues with manifest symptoms, over 90 percent are positive, and where the symptoms appear late in life the reaction is positive in 50 percent of the cases.

Therefore in a considerable number of cases of visceral syphilis, the Wassermann is liable to be negative, so as to require a very careful analysis of all suggestive clinical signs.

It is a good rule to always think of syphilis in every case of doubtful diagnosis; again the mercury-iodide therapeutic test often furnishes most satisfactory results.

Treatment. Although salvarsan and the newer product—neo-salvarsan, are ideal in their effect in primary and secondary mani-

festations of syphilis, these preparations have little place in the treatment of visceral syphilis.

One of the actions of salvarsan is to produce a reactionary inflammation, which causes a swelling of the lesion, therefore it can easily be understood that a slight amount of reactionary inflammation and swelling would produce closure of a coronary artery, already narrowed by an endarteritis.

Mercury remains the best specific medication in syphilis in all stages. It may be used by mouth, by inunction, by deep intramuscular injections, or intravenously. The deep intramuscular injections offer a most satisfactory and easily controlled method of giving a maximum amount of the drug.

It seems to be the consensus of opinion that the drug is best administered for periods of 15 to 25 injections, daily, or every second or third day, and repeated again after an interval of three or four months, until the patient is cured.

The iodides are of special value in gummatous disease. The dose may be small and give satisfactory results in some instances, and in others it must be maximum, amounting sometimes to 300 grains in 24 hours. It should be administered in periods like the mercurial treatment. A good plan is to use the iodid in periods when the mercury is not used. The iodide treatment alone specially in the arterial cases often effects remarkable cures. The results of all forms of treatment should always be controlled by the Wassermann reaction.

General Conclusions: The list of cases of visceral syphilis reported in the paper could readily have been augmented from personal experience, and that of my colleagues, and it is the expression of all who have written on this subject, that visceral syphilis is a more common affection than generally supposed.

Doubtless the three diseases which cause the greatest economic loss are tuberculosis, rheumatism, and syphilis. In the latter alone have we a means for early diagnosis, two specific efficient drugs and a reliable index for control of treatment. Yet it is not an exaggerated statement to make that in proportion to the efficiency of specific measures, syphilis is one of the most poorly treated of all the diseases. For this latter fact two reasons may be given, the first being the exclusion of the patient with syphilis from the majority of the hospitals. The mode of transmission is now known, and the fact well established that it is the least contagious of the infectious diseases. Comparatively simple precautions will prevent infection of attendants or other patients.

The second reason is that, not sufficient recognition is made of the efficiency and importance of the measures of early diagnosis and index for controlling treatment, so that treatment is not sufficiently intensive in the early stages when it is most susceptible to specific therapy.

Early eradication of this infection is going to result in a tremendous diminution in the death rate from chronic diseases in later life.

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Discussion.

Dr. C. F. Wahrer, Ft. Madison: Some years ago a woman of about 44 who had commenced to enter the frigid zone and for whom the wooings of her Adonis had no more particular attraction, did not respond very well to his usual solicitations. She had traveled northward, and he went to Chicago and got syphilis. He came home after while and went to a local physician who treated the primary sore, and when that was gone he succeeded in making himself once more attractive to her affections, and in about two months after that he sent her to my office literally covered with the syphilides. He asked me to lie to her, tell her it was a cancer or something else, but "For God's sake, to cure her." All the more because both were church members, people well respected in their respective communities, had a family of children, and he wanted to keep up appearances with them for fear of a tragedy in the shape of divorce, and possibly suicide or homicide. I did the best I could with the moral affair of it. I put her upon anti-syphilitic treatment, and told him that he must come to my office so that I could treat him too, or I would give him away. I treated both of them, and in a little sooner than the usually expected time she seemed to be clean of all syphilitic manifestations. Mind you, I did not say she was cured. She seemed to be clean of all syphilitic manifestation. I kept her under observation until the end of the second year when she came down with a very severe, what I called post-syphilitic nephritis, as she exhibited all of the usual symptoms of a nephritis. The amount of albumin was continuous, every day, and varying from one-half to three-quarters of one percent. I made up my mind that it was this syphilitic affair, that syphilis had something to do with bringing this on. I put her to bed and had her put on warm clothing, and again placed her upon anti-syphilitic treatment. At the end of six to eight months I was rewarded by at least an apparent cure of her nephritis. She gradually resumed her station in life, and seemed to have about her usual health, during which time she passed through the menopause. I have, after eight years, no cause to think that her syphilis and the following nephritis were not cured, because she seems to be in the usual health of a woman of her age and able to continue the work that the ordinary housewife usually does. This tragedy might have been averted if the physician, after he had cured the primary sore, had not told the man he was well and could now resume his usual marital relations, etc.

Dr. Joseph Sailer, of Philadelphia: Mr. President and Gentlemen—I have listened with great interest to Dr. Bierring's paper. I know, as far as my experience goes, the extraordinary increase in our knowledge of syphilis which has been brought about by the existence of a definite reaction. It is, I might say, one of the tragedies if it were not at the same time one of those things which promised so much for the future. I can well remember that when I was a student the thought that aortic insufficiency was practically invariably a syphilitic manifestation had not arisen. The frequency with which syphilitic manifestations in the heart in the forms of various muscular lesions occurred was something we did not suspect. Syphilis of the liver was almost unknown except in the form of large gummata and resulting scars. So that, to a very large degree, cases which were suspected to be visceral syphilis were comparatively few. The necessity of a very definite history was always insisted upon, and I can remember very well how at the convention of the American Neurological Association there was a very violent dispute at one meeting as to whether it would be fair to consider the so-called meta-syphilitic diseases—that is, *tabes dorsalis* and *paresis*, as necessarily implying a previous syphilitic infection. Now I think it is fair to say that our attitude as physicians has changed completely.

The proportion of cases of syphilis I see in my hospital experience is very large. The proportion of cases that I see in private practice, and I very frequently have the Wassermann reaction made if there is any reasonable suspicion at all, is fairly large. And in many of these cases I think it is perfectly fair to believe the statement of the patient that they are not aware of any preceding syphilitic infection. I remember very well an extraordinary case that puzzled practically the entire staff of the University Hospital for over a month, a student of 19, a young fellow, an athlete, one of the nice clean students, a man to whom one was naturally attracted, who developed a very obscure cerebral condition. At first it was supposed to be a brain tumor of some kind. But events showed it was syphilitic. The patient recovered very well under careful and a very prolonged and thorough specific treatment, and has for a period of some years remained in good health. The question of infection arose. He was a perfectly honest and candid fellow. We told him what we suspected, what indeed we knew to be the truth, and he was absolutely sure that he had never in any way been exposed. The case was subsequently cleared up by a conversation with the man's father, who had a few years previously been infected and who had unquestionably transmitted the disease to his son, of course in entire innocence that he was in such a dangerous condition.

I had before my ward classes this winter, and I called their attention to the fact, a man who had been chef in one of the largest hotels in Philadelphia, a man who had been a waiter in one of the best restaurants in Philadelphia, and a man who had been a barber for many years in Philadelphia. Every one of those men had been syphilitic for years. They all gave Wassermann reactions with the plus or double plus, and they had been going around the city of Philadelphia plying their vocations, and it is possible, although that of course we don't know, that they may have infected others.

I think that probably not in our generation, possibly not in the next generation, but some time in the future of this country, we are going to consider syphilis as a disease against which, for the protection of the community, we are going to take very vigorous measures. With the exception of certain countries, as for example East Africa where the disease exists almost universally and I understand in a most virulent form, it may be possible to a large extent, I believe, although the idea may be Utopian, to stamp it out in civilized communities. I think such papers as Dr. Biering's a very great help to achieve this very desirable result.

Dr. Walter Fraser, Algona: One of the points that I believe should be emphasized in the treatment of syphilis, whether in the primary, secondary or tertiary stage, is the pushing of the remedy to the full physiological effect. We will get results almost invariably and soon by doing so. I remember one case of visceral syphilis which I was only able to make a diagnosis by the therapeutic test. It was a case of enlarged spleen. I made a blood examination and all the other examinations I could think of except the Wassermann reaction, which I was not able to make at that time, and finally decided it must be a case of syphilis. I pushed the iodids, giving 120 grains of potassium iodid three times a day. And in a very few months I got satisfactory results. Now this patient insisted that he had never been infected with syphilis. Whether he lied to me or not, I don't know. But it is almost proverbial that those who have syphilis and do not have to disclose the fact are apt to lie about it. And as I heard I believe Dr. Lyman of Chicago once say, "They will lie about it, and consequently the only resource you have is to try the therapeutic test." And I got results in that case. Also had a case of trouble of the stomach where a fellow denied any knowledge of having had syphilis, but the therapeutic test proved it must be syphilis because he took iodids in very large doses and his stomach got better.

Dr. Bierring: I wish to again emphasize the need of a more intensive treatment in all stages of syphilis. With a good means of diagnosis, by the early demonstration of the spirochete, and the Wassermann reaction, and through the latter a proper control of the treatment, there seems no disease in which the treatment can be so easily and effectually carried out.

I feel that it is reasonable to conclude that all syphilis is visceral, that it is essentially a visceral and systemic disease, and most of the expressions which we see are simply manifestations of this systemic condition.

The treatment should be carried out to the point that the Wasser-

mann test becomes negative, for when this has been attained the infection has been overcome. In this connection it must be considered that the various forms of anti-syphilitic treatment have an inhibitory influence on the Wassermann reaction.

In visceral syphilis, salvarsan, or the latter product neo-salvarsan, is not nearly as satisfactory or effective as the results which can be obtained by the older method of therapy. There is also a certain element of danger in the use of salvarsan, particularly in that form of visceral syphilis which affects principally the aorta and coronary vessels.

THE SIGNIFICANCE OF THE SYMPTOMS OF AMETROPIA*

H. B. GRATIOT, M. D., Dubuque.

The ordinary symptoms, resulting from uncorrected errors of refraction, have become so well known to the average individual, that it is no longer customary to consult the family physician for headaches, and other less common reflex symptoms, but to go directly to the oculist or optician for glasses. In the event of a visit to the family physician for relief from a continual headache, unless there is some very manifest cause in evidence, the patient is advised to have the eyes examined. The oculist, knowing that from sixty to eighty per cent of permanent headaches are ocular in origin, is satisfied, without further search, with an examination that reveals ametropia, or some muscular imbalance. In the large majority of instances he is correct in the belief that the wearing of glasses will be all that is necessary to bring about the desired result, but there is the troublesome minority who persist in having headaches in spite of our well adjusted correcting lenses.

The fact is so well known that the eyes are so commonly the cause of headache that the eye specialist has referred to him many cases in which the ordinary symptoms of eye strain are the most prominent, but they are wholly the result of some general abnormality which has weakened the eyes so that they are no longer capable of overcoming a small error of refraction without causing reflex symptoms. The very nature of the ocular structure makes it susceptible to any prolonged systemic disorder which lowers vitality, and the ametropic eyes are the first organs to give way and manifest signs of the latent physical disorder by furnishing symptoms of eye strain. Many individuals are so poised that the least deviation from the normal disturbs them, and a very small error of refraction will cause agonizing symptoms, while the same condition in an average person will not cause the least discomfort. I have observed a very skilled mechanic who, for fifteen years, had lost several days each month on account of attacks of "sick headache", which confined him to the house. His employer induced him to have his eyes examined and since the correction of a very insignificant error of refraction, now eight years ago, he has not lost a days work from

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illness. I have observed another instance in a young girl who was relieved of a recurring epistaxis by wearing corrected lenses for a very moderate amount of ametropia. Cases of this kind are the rare exceptions, occurring in neurotic individuals, and they create, in some physicians, the false belief that errors of refraction are responsible for all kinds of bodily ills.

In normal individuals, employed at work that necessitates continued use of the eyes for close work, several hours each day, it is to be expected that they will eventually require correcting lenses for even a very moderate ametropia. But when an average, apparently healthy individual, with a small error of refraction, who has not overtaxed his eyes by an unusual amount of close work, complains of headache, aggravated by close work with the eyes, and other asthenopic systems, it is strong presumptive evidence that there is some underlying remote cause which is robbing the eyes of their natural compensating power. To order glasses, in these cases, without removing the underlying cause is an injustice to the patient, because the continuance of this influence eventually results in permanently sensitized eyes that are ready to flush up on the least provocation, and are a source of constant annoyance to the patient.

When a subject, not yet past middle life, is relieved of asthenopic symptoms by the use of convex lenses, for three or six months, and then has a return of the asthenopia, and is again relieved by still stronger convex lenses, we may rest assured that some abnormal systemic process is at work, and is gradually breaking down the natural accommodative compensating power of the eyes, and eventually glasses will not suffice to relieve the asthenopic symptoms.

It is not always possible, especially after a single examination of the eyes, to state with any definite assurance, whether or not the asthenopic symptoms are entirely dependent upon the error of refraction, or upon some more general cause. If they are actually partial phenomena of some severe general affection, they can, with some care, be easily recognized. The majority of these cases of secondary asthenopic symptoms are not caused by very severe general affections. A considerable number are dependent upon transient causes, and it is not uncommon to observe patients who are relieved of severe asthenopia, by the wearing of suitable glasses for a considerable amount of ametropia, who, in a short time, are able to discard their glasses without any consequent discomfort.

Many patients develop their first symptoms of a latent ametropia during convalescence from one of the acute infectious diseases, and injudicious use of the eyes during this time, frequently causes permanently lowered accommodative power, so that the patient finds it necessary to resort to the continued use of glasses. But it is the continued influence of the insidious, chronic diseases, that commonly cause secondary asthenopic symptoms. The subjects of

catarrhal appendicitis, pelvic infections, gall bladder diseases, anemia, various gastro-intestinal disorders, adenoids, diseased tonsils, suppurative nasal accessory cavities, are all very apt to first manifest their inroads upon the general system, by symptoms of eye strain. Well chosen glasses temporarily relieve these symptoms, and deceive the unthinking patient and physician into believing that the trouble is entirely ocular, until irreparable damage has been done to the eyes.

A careful consideration of the personal history of the patient will usually furnish some information that will enable the careful observer to obtain some idea of the nature of the underlying cause. He can also gain considerable information by considering the severity of the reflex symptoms in comparison with the amount of ametropia. A healthy young individual with hyperopia, not exceeding one diopter, should not suffer any inconvenience from average use of the eyes. For instance,—a young man recently came, complaining that for the past six months he had had a constant frontal headache, aggravated by any attempt at close work with the eyes. He also had a considerable smarting and burning of the eye lids, and blurring of vision for close work. He was a farmer by occupation, with an excellent personal history, was not addicted to the use of alcohol or tobacco. An examination of the eyes was negative, except 1-2 diopter of hyperopia in each eye. It seemed that his symptoms were entirely out of all proportion to his error of refraction, and he was sent to an internist for a physical examination, with negative results. Instead of prescribing glasses for his hyperopia, he was directed to take divided doses of calomel, followed by salts, once a week, and to use daily, some one of the mild cathartic waters. In two weeks his symptoms had entirely ceased, and he had no return.

In another case, a young girl thirteen years old, with one diopter hyperopia in each eye, complained of very decided asthenopia. Upon careful inquiry it was found that this youngster was fulfilling social obligations that would have done credit to one of mature age. A correction of her habits by enforcing regular hours of sleep, and attention to diet was all that was required to relieve her asthenopia.

In the latter case, the personal history of the patient furnished abundant evidence that her incorrect habits had rendered her eyes incapable of longer compensating for her error of refraction without causing reflex symptoms, and to have allowed a continuance of her incorrect habits, must have eventually resulted in a general break-down. The first case furnishes an excellent example of an instance where the cause was obscure, but the results justify the belief that it was a defective elimination.

In any case where the cause is obscure, eliminative therapy can do no harm, and will yield surprisingly good results. In instances where the primary trouble is one of the chronic infections, requir-

ing surgical intervention, the patients are unwilling to submit to an operation until some more urgent symptoms manifest themselves. In the interval we can save the eyes by correcting the error of refraction and limiting the use of the eyes for close work until the cause is firmly removed.

Gastro-intestinal derangements have a very debilitating effect upon the eyes, and they constitute one of the most common causes of secondary symptoms of ametropia. They are also extremely difficult to manage successfully. A course of cathartics, intestinal antiseptics, and restricted diet, will have very favorable influence, and in a small percentage of cases permanent cure will result, but in many the results are only temporary, the symptoms recurring as soon as the diet is increased, and the cathartics discontinued. The patients naturally become discouraged of obtaining relief, and it is extremely difficult, and often impossible, to encourage them to change their habits and mode of living, and they eventually become confirmed neurotics, continually changing from one oculist to another, with the hope that they will some time strike one that "understands their case". Irritative symptoms develop, presenting the characteristic red lid margins, and the conjunctiva that flushes up on the least manipulation of the eye lids, or when the eyes are used for any amount of close work. Some of them actually develop choroidal changes, and, not infrequently, a descending optic neuritis.

It is a singular coincidence that invariably this class of patients have very trivial errors of refraction. In the young subjects undoubtedly the absorption of toxins from the abnormal alimentary tract has a very important influence in causing the development of myopia, and in older individuals we observe the same condition, eventually resulting in mixed, or myopia astigmatism.

THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

EDITORIAL

American Physicians Abroad.

A party of physicians, about 45 in number, sailed from New York on the S. S. Bremen July 3rd for the purpose of studying medical conditions on the continent, finally reaching London Aug. 5th for the International Congress. The ultimate purpose of this itinerary was more for the study of the conditions under which European physicians and surgeons worked, than to see actual clinics, yet it so happened that an opportunity was given not only to study hospital construction and economic conditions, but also to witness clinical demonstrations both medical and surgical. An International Committee on Physicians Travel study had been formed for the purpose of facilitating the work in every possible way, and it is not too much to say that no equal opportunity had been afforded foreign physicians to understand medical conditions as they exist in Europe. The party of physicians referred to were thoroughly in earnest and from the beginning made careful preparation for a systematic study of the problems which confront the profession in those centers of medical thought.

The American Committee was organized by selecting Dr. DeGarmo, of New York, President and Dr. Kovacs of New York, Secretary. An extensive correspondence with the European Committees extending over a considerable period of time was entered into in order to perfect the arrangements for the economy of time. To keep up the spirit of the work, lectures and lantern slide demonstrations were given on board the ship by Dr. Seaman, New York, Dr. W. Anderson, San Francisco, Dr. Fred H. Albee, New York, Dr. A. J. Crowell, Charlotte, N. C., Dr. H. L. Foss, Philadelphia, Dr. J. P. Munroe, Charlotte, N. C., Major Page, U. S. Army, Dr. J. F. Percy, Galesburg, Ill., Dr. John Punton, Kansas City, Mo., Dr. C. M. Strong, Charlotte, N. C., Dr. H. VanRensselaer, Albany, Dr. P. B. Salatich, New Orleans, La., and Dr. C. Johnson, Coffeyville, Kansas.

In Paris under the general direction of Prof. Brondel, an opportunity was given to visit and study conditions at the principal hospitals, Piti, Salpetriere, Hotel Dieu, Hospital Broca, and three or four maternity hospitals, including the Boueloeque and Tarnier.

As is well known, the hospitals on the continent are constructed on the pavillion plan, and are placed in large parks, ornamented with a profusion of flowers and shrubs which adds very materially to the attractiveness of the environments. Corridors extend along the outer walls and often connect one building with another. The

hospitals are very old, constructed long before laboratories were thought of, and are now placed in converted rooms and have something of a primitive appearance. The X-Ray apparatus is of the simplest type, but the work shows that expensive and elaborate equipment is unnecessary or that the brains that operate them are of the highest type.

The clinical facilities afforded by these hospitals are remarkably good. There are about 6000 medical students attending the University of Paris. In addition to students from France, large numbers come from the French provinces and from Southern Europe, Bulgaria, Servia, and from South America and Cuba, and also a considerable number from Italy and Spain, who appear to prefer the University of Paris to those of Austria, Germany, or England. About one half or about 3000 students are foreigners.

All the general hospitals and the maternity hospitals except the maternity of Boudelocque and Tarnier are open to the instruction of students; the latter is reserved for the training of midwives. In all these maternities, about 12,000 women are confined annually. When these patients are admitted they are carefully examined by the Senior Obstetrical Officer who directs such laboratory studies as seems necessary. All this work is carried on with military precision and under the direction of the most skillful obstetricians in Paris. All these men are connected with the hospital. It appears that a considerable amount of the private outside obstetrical practice is done by midwives, especially among the industrial classes and to meet this condition, a considerable number of trained midwives are educated.

The most complete laboratory equipment was under the direction of Prof. Widal who is also in charge of the medical side of Hospital Cochin. Prof. Widal showed us great courtesy in showing us about his laboratory and in explaining the construction of a new wing which was well under way. It is really quite modern in its construction. Prof. Widal speaks English fluently and is altogether a very interesting man.

Prof. Pozzi gave a surgical clinic which drew our attention to one particular point, and that was that trained nurses are not used in the surgical clinic. Prof. Pozzi had four trained surgical assistants besides the anesthetist.

The Exotic Flora of the Uterus in Relation to Fibroids and Cancer.

In an address by Sir John Bland-Sutton, published in the British Medical Journal for Feb. 1st, 1913, the difference is shown in the mortality of hysterectomies for fibroids of the uterus and carcinoma of the neck. At the Middlesex Hospital for the year 1910, 65 women were operated on for fibroids with no deaths. During the same period 35 women were examined under anesthesia for cancer of the cervix and 17 were selected as operable. Of these 4 died

from the operation or its sequelae. In seven London hospitals for the year 1910, 370 women were operated for fibroids with 9 deaths. In that year in the same hospital 81 cases were subjected to hysterectomies for cancer of the cervix with 13 deaths.

The difference in the results in removing the uterus for fibroids and for cancer is explained by Sutton on the ground of difference in the flora of the uterus.

“A large amount of patient labour has been expended in investigating the bacteriology of the female genital tract. The varieties of micro-organisms found there are numerous, but the chief are the gonococcus, streptococcus, staphylococcus, and the tubercle bacillus. Of these the gonococcus attacks mainly the mucous membrane, and is more destructive to function than to life. The streptococcus flourishes in loose connective tissues, and when this tissue is vascular, as in the neighborhood of the uterus the micro-organism enters blood vessels and lymphatics. It invades the uterine and periuterine tissues through breaches of continuity in the genital tract caused by childbirth, miscarriage, operations on the uterus, and criminal abortion. The streptococcus is especially destructive to life and often flourishes in company with the staphylococcus, bacillus coli communis and bacillus pyocyaneus. Breaches of continuity of its surface allow micro-organisms, present in the vagina, to colonize the tumor and convert its tissues into a stinking, decomposing slough. The infection extends to the endometrium and a condition identical with puerperal fever is established. An extruded uterine polypus the size of a golf ball infected with streptococci sometimes destroys life quicker than a virulent cancer.

A woman with cancer of the neck of the uterus is in much the same condition as one with an extruded and septic fibroid, for the cancerous tissues soon become invaded with pathogenic flora; of these the streptococcus is the most deadly. The micro-organisms which flourish in cancerous tissue make this disease so destructive to life; the streptococci in uterine cancer are very virulent, especially for the **peritoneum**.

An important factor in creating a higher mortality from hysterectomy in cancer of the cervix is the occurrence of pulmonary embolism which is materially effected by infection. Dr. Sutton presents some interesting observations and offers some conclusions as to the care which should be observed in the technic of the operation for the removal of the uterus. He attempts to show that the methods of placing the sutures to avoid the chances of infection are of great importance. The reading of this paper so impresses us, with the value of what Sir John says, that we have reproduced some of the main points.

“It is difficult to determine the actual frequency of pulmonary embolism as a sequel of hysterectomy, for surgeons are very reluctant to publish their experience; but there is sufficient evidence

available to give some notion of its relative frequency and the variations met with in the practice of different surgeons. Baldy states that among 366 operations for fibroids in the Gynæcean Hospital, Philadelphia, there were 13 sudden deaths, attributed to embolism. In the Middlesex Hospital from 1896-1906, both years inclusive, there were 212 abdominal hysterectomies for fibroids, and of these patients 3 died from pulmonary embolism. At the New Hospital for Women, London, during 1901-1910 hysterectomy was performed for fibroids on 189 patients, and of these 2 died from embolism."

"At the Hunterian Society, London, in 1909, I attributed the frequency of pulmonary embolism after hysterectomy to infection of the buried sutures used to close the abdominal incision, the channels of infection being the epigastric veins. Being desirous of ascertaining the bacteriologic condition of the cervical canal and the uterine cavity of women with fibroids, I had a series of observations made in cases of subtotal hysterectomy. The investigation was conducted by two independent observers (Mr. Somerville Hastings and Mr. C. H. S. Webb) and their findings tallied uniformly and were confirmed by the clinical course of the patients. In the majority, especially nulliparous spinsters, the cervical canal and uterine cavity were sterile; in married women who have had children, and in whom the mouth of the womb is patulous, staphylococcus, bacillus coli, and Döderlein's bacillus occur. The proportion of cases is small in which micro-organisms are found, but they are more common in a uterus containing a submucous fibroid in a woman who has had children than in that of a nulliparous spinster with a narrow cervical canal."

"Femoral thrombosis and fatal pulmonary embolism are recognized sequels of hysteropexy. In this operation, if the retaining sutures traverse the endometrium and it be septic, the sutures will become infected and cause trouble. A study of thrombosis occurring under such conditions led me to believe that the factors which produce changes leading to thrombosis of the external iliac or the femoral veins are the buried sutures in the abdominal incision. I made a series of trials in which a number of abdominal incisions were closed with buried silk sutures, also a series of cases in which through and through sutures were employed. However carefully the suture material is prepared and inserted with hands covered with sterilized rubber gloves, now and then a buried suture will give trouble. Even when the sutures appear to settle down without disturbance they often cause slight rises of temperature."

"For a period of two years I buried no sutures in an abdominal incision, except in one patient. During that period I had no post-operative thrombosis, and only one case of pulmonary embolism, and this happened to the patient in whom I closed the wound with buried sutures. She was a midwife on whom I performed hysterectomy for a big submucous fibroid, and as this woman was very stout and

led an active life, it seemed expedient to take every precaution to secure a sound scar. This patient seemed to be making a satisfactory recovery, but on the eighth day her temperature rose to 103 F. On examination some hardness could be felt in the lower portion of the wound. I warned the house-surgeon that there was probably thrombosis of the deep veins, and impending danger of pulmonary embolism. She died suddenly a few hours later, and an embolus was found at the post-mortem examination, firmly plugging the pulmonary artery."

"It will be obvious to any one who has studied the flora of the uterus that the surgeon's fingers must become contaminated by handling the tissues of the cervix in the course of a total or subtotal hysterectomy, when the uterus contains pathogenic micro-organisms. It is, of course, true that the uterus, in a large proportion of patients, is sterile, but micro-organisms are present in a sufficient number of cases to account for the frequency of inguinal thrombosis as a sequel of hysterectomy."

"Pulmonary embolism is more frequent after abdominal than after vaginal operations; useful evidence is furnished by Klein, who collected the statistics of the Bettina-stiftung (Vienna), and found 9 fatal cases of pulmonary embolism in 1,720 abdominal sections. During the same period there was no instance of fatal embolism among 1,992 vaginal operations. Wertheim in a recent discussion on this matter admitted that in his practice thrombosis was three times more frequent after abdominal section for myoma than after vaginal myomectomy and hysterectomy for fibroids. It is unnecessary to adduce further figures, because this opinion is accepted by most surgeons who have had a wide experience in this class of surgery, but the evidence furnished by Klein is good circumstantial evidence towards implicating buried sutures as causative agents in the production of the primary thrombosis. Having satisfied myself that the fingers of the surgeon do become contaminated in the course of abdominal hysterectomy when the cervical canal contains micro-organisms, and in this way infect the suture material in the course of the operation, I adopt the following preventive measures."

"After amputating the body of the uterus I apply iodine by means of a piece of cotton-wool on a probe to the cervical canal, and also lightly swab the cut surface of the stump with tincture of iodine before tying the vessels and introducing the mattress sutures. In a total hysterectomy I carefully swab the cut edges of the vagina with tincture of iodine before ligaturing the vessels. This trifling modification in procedure has a great influence for good on the post-operative course of the case."

"After completing the pelvic part of the operation I wash my gloves with warm soap and water, and rinse them thoroughly with warm water and dip them in a solution of perchloride of mercury (1 in 5000) before introducing the sutures. In clean cases I insert

three or four silk sutures No. 2) to bring the facia together, and the wound is closed by a series of through-and-through sutures."

"In operating for conditions known to be septic no sutures should be buried in closing the abdominal incision.

Publicity in Relation to Cancer.

Dr. Thomas S. Cullen in an address before the Canadian Medical Association and published in the Canadian Medical Association Journal, draws attention to the efforts being made to arouse public interest in the cancer question. It is known that there is only one treatment that offers any hope of cure at the present time, and that is early operative treatment. The laity has so many false notions about cancer that the moment of safe procedure and greatest chance of cure is allowed to pass in so many instances. It is known that cancer in the beginning is strictly a local process and a process amenable to surgical treatment. If this fact could be brought forcibly before the laity, great good could be accomplished.

Through a committee appointed at the last meeting of the Clinical Congress of Surgeons of North America, the coöperation and support of some of the most representative magazines in the country has been enlisted. Mr. Bok, editor, and Mr. Harriman, managing editor of the Ladies' Home Journal, manifested the deepest interest in the matter and suggested that a lay writer could better reach the public ear, and selected Mr. Samuel Hopkins Adams. Mr. Adams visited various surgical clinics throughout the country and then wrote a most comprehensive article on the subject. His first article was published in the Ladies' Home Journal for May 1913. Collier's Weekly and McClure's Magazine also contain articles on the same subject, from Mr. Adams' pen. It is estimated that these three articles reached between eight and ten millions of readers. Harper's Weekly for March 29th, contained an article urging cancer patients to be operated on without delay. Abstracts of these articles appeared in many of the daily papers.

Dr. Cullen expresses the opinion that these contributions to the lay press will have an immense influence in leading patients to consult physicians early when suspicious symptoms appear. His observations and those of numerous professional friends seem to support this opinion in that a considerable number of patients stated that they were induced to seek medical advice on account of reading these articles. Dr. Cullen states that "The aim of our Cancer Campaign Committee was to stimulate a widespread interest in the subject among the laity. Its labors have already born fruit. Within the last few weeks a most representative body of New York laity, both men and women, have joined forces with the medical profession in the formation of the American Society for the Control of Cancer. This Committee is assured of excellent financial backing and is bound to be a great factor for the dissemination of knowledge concerning cancer."

Alcoholism.

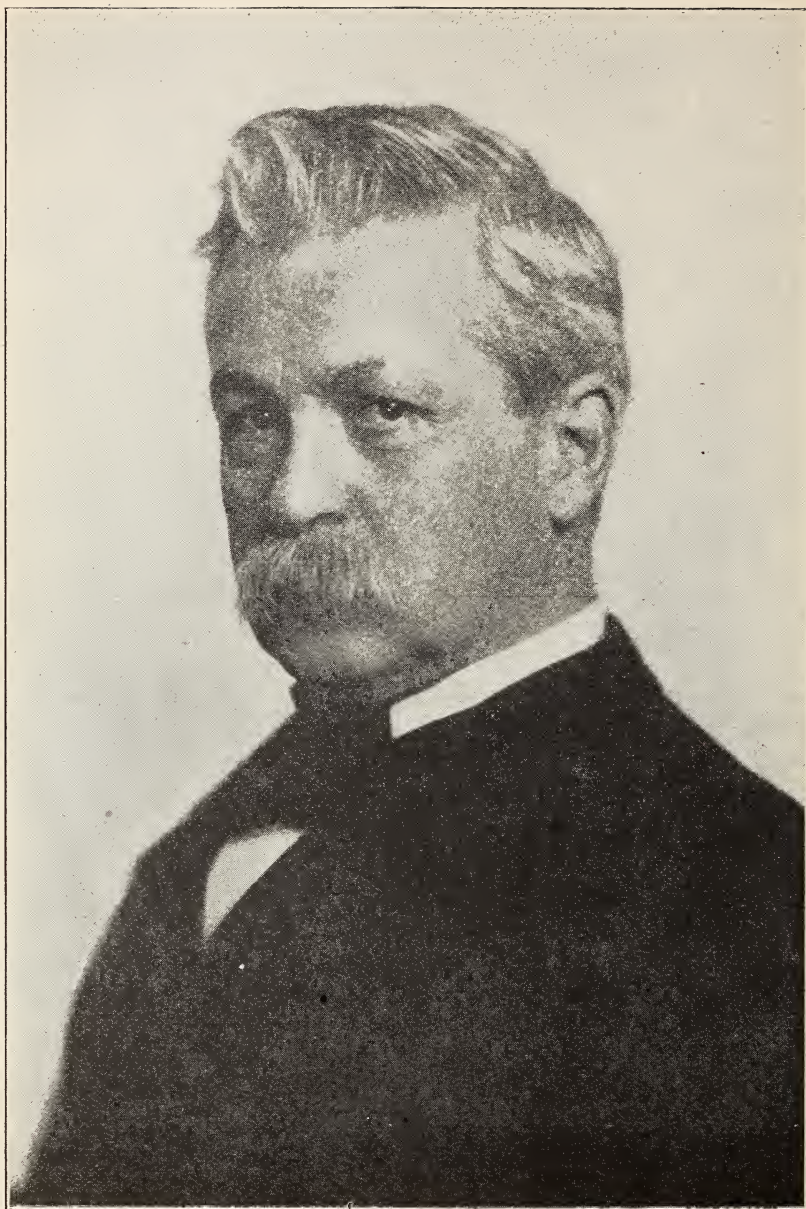
At a recent conference of Charities and Corrections held at Cedar Rapids, Dr. George Donohoe, Superintendent of the Hospital for Inebriates at Knoxville, delivered an interesting address on the "Influence of Inebriety upon Society," in which he made some statements of great interest to the people of Iowa regarding the effect of inebriety upon social institutions. That alcohol and public health are not synonymous is evidenced from his study, as the poverty which it produces is a greater menace to health than any other condition. Early death and preventable sickness are common in the poverty classes. The doctor says that statistics taken in England show that from 40 to 51 percent of all poverty is due to intemperance and that these statistics are quite applicable to this country. In his reference to tuberculosis as the greatest cause of adult mortality, as the result of over-crowded tenements in which the poor spend their money for drink instead of better housing and better food. He says the most vigorous man who becomes alcoholic is without resistance to tuberculosis, and if his labor exposes him to infection he succumbs.

The effect of alcohol on public health is not entirely revealed by death certificates. Many certificates on which the cause of death is assigned to pneumonia, erysipelas, tuberculosis, cirrhosis of the liver, Bright's disease, are known to have their beginning in alcoholism. Moreover, it is responsible for a great slaughter of the "innocents." In England and in Wales, in one year, 1,899 infants were suffocated by "over-laying" in bed by drunken parents. Moreover, alcoholism is the cause of a great number of needless accidents and is a sociological factor in many directions.

The study of the doctor pertaining to the part alcohol plays in criminality, accidents and preventable diseases is illuminating and urges the people of this state to undertake still more aggressive measures to suppress this evil.

University Clinics in St. Paul.

President Vincent of the University of Minnesota proposed to have the clinical work of the St. Paul City and County Hospital so divided that the teaching faculty of the medical school will receive half the patients. On October 1st the present staff system of the hospital will be changed and arrangements will be made whereby half the staff will be members of the faculty of the university medical school and on duty all the year round while the other half will consist of physicians not connected with the University who will serve for periods of three months.—Journal of the American Medical Association.



Dr. Arthur L. Wright of Carroll, Iowa, who died in Paris, July 19th, 1913, of thrombosis of the superior mesenteric vein, was born in Madison, Wisconsin, Jan. 17th, 1851; received his preliminary education in the public schools of Madison and was a student in the University for two years, and graduated from Rush Medical College Feb. 17th, 1874. June 17th, 1874, he located in Carroll and commenced the practice of medicine. Dr. Wright made his place in the front ranks of his profession through his ability, courage, strength of character, and unremitting effort.

When Western Iowa was young, Dr. Wright settled in a small but promising community of German people, mostly farmers, and learned their language. Very soon he was called far and wide in all classes of

medical and surgical cases, and although there was but little to do with, the nursing of necessity being done by the busy members of the family, Dr. Wright's commanding personality gave him a success beyond most men and gave him a place in the estimation of the people not soon to be forgotten. The long hours and days and nights of hard work did not blunt his interest in the literature and progress of his profession. The best medical journals and books found a place on his library table and were carefully read and consulted. Dr. Wright set aside a certain number of weeks every year to visit the clinics of other workers. In addition to this, considerable time was given to medical societies. His district society and the state and national medical associations were almost never forgotten. He was rarely absent from the meetings of the National Railway and Missouri Valley Medical Association, and was also a frequent contributor to the programs of these various medical bodies. At one time or another Dr. Wright had been elected as president of nearly all of these associations. He was president of the Iowa State Medical Society in 1875, had served as president of the American Association of Railway Surgeons, and of the Missouri Valley Medical Association, and at the time of his death was president of the North-Western Association of Railway Surgeons. He had served as a member of the Board of Trustees of the American Medical Association two terms, and was elected 4th vice-president at the Los Angeles meeting of the American Medical Association.

In addition to Dr. Wright's skill in the practice of medicine and surgery, he possessed an unusual knowledge and acumen in business affairs, and had accumulated a very comfortable fortune.

Dr. Wright is survived by wife and son. The son is engaged in scientific agriculture on a large tract of land purchased some years ago by his father in Canada.

Dr. Wright's health for the past few years had been somewhat impaired, and it was for this reason and for the advantages of attending a brief study of the conditions under which medical men were doing their work in different countries of Europe, that lead him to make this trip, which was so soon to end in disaster. A few days after reaching Paris as a member of the Physicians' Travel Study Tour, the symptoms described in the post-mortem statement, appeared.

Dr. Wright and his friends had hoped that this European trip might be of advantage to him in restoring his health and give him additional freshness for the continuation of his work. It had always been Dr. Wright's hope that he might be able to continue his work until the last, which fact he fully realized.

Report of the Central Safety Committee of the Chicago, North-Western Railway Company.

RALPH C. RICHARDS, Chicago, Chairman.

The question of efficiency and safety on American railways has excited very earnest interest both on the part of the public and the corporations as well. How can this loss of life and limb be reduced? That this can be done there is no doubt. It has been contended by some that efficiency combined with safety is more likely to be secured by Governmental ownership of Railways, but this does not seem to be true. Referring to the passengers only: In Russia where two thirds of the mileage is owned by the state, the percent of killed and injured is greater than in the United Kingdom or in the United States, being per million passengers carried, 2.24 killed and 11.63 injured in Russia: .14 killed and 1.94 injured in the United Kingdom, and .45 killed and 6.58 injured in the United States.

A table compiled of eight of the leading countries showing passengers killed and injured per million carried, shows:

| | | | |
|-----------------|-------------|----------------|---------------------|
| Germany | .08 killed | .39 injured. | Mostly State Owned. |
| Austria Hungary | .12 killed | .96 injured. | Mostly State Owned. |
| France | .13 killed | .18 injured. | Mostly State Owned. |
| United Kingdom | .14 killed | 1.94 injured. | Private. |
| Switzerland | .15 killed | 1.12 injured. | State Owned. |
| Belgium | .22 killed | 3.12 injured. | State Owned. |
| United States | .45 killed | 6.58 injured. | Private. |
| Russia | 2.24 killed | 11.63 injured. | 2-3 State owned. |

There is no evidence to show that state owned railways are safer than private companies. There are other factors to be taken into account than state ownership as to safety of travel. Apparently one of the most difficult elements to overcome is lax discipline and disregard of rules and orders. It rarely happens that accidents are due to viciousness but to thoughtless disregard and the unaccountable passion for taking chances.

There can be no doubt that Mr. Richards and the companies that have followed his lead are on the right track in bringing about a fortunate revolution by campaigns of education. It is somewhat difficult to compile accurate statistics of railway accidents because years vary so much, but taking Mr. Richard's tables for two years, the reduction of 21.9 percent less deaths and of 23.2 percent decrease in injuries or 155 fewer persons killed and 4826 fewer persons injured on one railway system in two years over previous years under substantially the same circumstances and conditions, places the matter beyond any question of doubt. This is indeed a great work, and the difficulties in accomplishing the results which the public can very little understand, should place the name of Ralph C. Richards in the front ranks of public benefactors.

BOOK REVIEWS.

The Narcotic Drug Diseases and Allied Ailments. Pathology, Pathogenesis and Treatment. By Geo. E. Pettey, M. D., Memphis, Tenn. Member Memphis and Shelby County Medical Society, Tennessee State Medical Association, American Medical Association, etc. Illustrated. F. A. Davis Company, Philadelphia. Price \$5.00 net.

Much of this book can be read by intelligent non-professional people with great profit. The author starts with the declaration that narcotic addiction is a disease and should be treated as such.

The author enters into a discussion as to the question of recognizable lesions or assumed material changes which cannot be demonstrated, and insists that any such contentions are detrimental to a safe and sound treatment of narcotic drug addiction. The author's conclusions are that the disease is a toxemia, a toxemia of drug, auto, and intestinal origin. There can be no objection to this and is in accord with the best thought on this subject. Morphinism and morphinomania are considered first. Its pathology, symptomatology, and treatment, are entered into with minuteness.

The necessity of prescribing opium and what safeguards should be observed are carefully pointed out. When the disease has once been acquired, judicious lines of treatment including medical, physical, and moral, are pointed out by one of experience. Most of these means are known to the profession, but their application is likely to be irregular and inefficient. The author takes exception to the careless use of the word "cure" which is so unfortunately used to designate the effect of a remedy after a few days use, and as it seems to us, when a patient can be regarded as cured, cannot be determined by days or months, but by

conditions of the patient recognized by the attending physician. It does not seem that drug treatment could have any particular effect as a means of tiding a patient over a danger point. What drugs may be used and how, also the use of physical training, diet, etc., we refer the reader to the exhaustive chapters of this book. Under the head of "Prognosis" the author says that it depends "very much upon the thoroughness with which the treatment is carried out". We believe this is a true proposition.

This subject is so important and means so much to the unfortunate victim of drug disease that unless the medical attendant has had a sufficient experience of his own, he should read carefully what is contained in this book before he assumes the responsibility of the treatment of one of these cases which is sure to tax his patience and skill to the utmost.

The Surgical Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Vol. 2. Number 3—June 1913. Published Bi-Monthly by W. B. Saunders Company, Philadelphia and London. Price per year—Paper \$8.00—Cloth \$12.00.

This number contains nineteen lectures. The two first papers Obturation Ileus due to Gall Stone and Intestinal Stasis from a Band of Adhesions are unusually interesting and point in considerable detail the important diagnostic fact in incomplete obstruction. The lecture on Tenoplasty of Flexor Tendons of Fingers should be read with considerable care because of its surgical and medico-legal importance. Dr. Murphy states that Volkmans paralysis is most commonly a sequence of too tight bandaging and is a traumatic myositis; that too tight bandaging continued 24 hours may produce the disease, and cites one case of his own where the paralysis appeared after six hours application of the bandage. "All the damage is done practically inside the first 72 hours. The contraction shows itself in from four to six weeks, and assumes a fixed condition within ten to twelve weeks." The lecture on Fracture of the Neck of the Femur presents several points of clinical interest. A very valuable lecture and clinical demonstration appears in the number on Pott's Disease by Dr. F. H. Albee. It is well known both in this country and in Europe that Dr. Albee of New York is doing some very valuable original work on bone transplantation in Pott's disease, and has shown by series of cases which have been under observation long enough to settle all questions of doubt, that deformities can be permanently corrected or improved by his method of well considered transplantation operations. Dr. Murphy was fortunate in securing Dr. Albee's lecture and demonstration for this number.

Medical and Surgical Reports of the Episcopal Hospital, Front Street and Lehigh Avenue, Philadelphia, Penna. Dr. Astley P. C. Ashurst, Editor. Vol. I. 1913.

The volume gives the arrangement of the hospital and a detailed abstract of all the work therein for the past year.

Twenty-seven members of the staff contribute to this number.

4841 patients were cared for during the year, at an average daily cost of \$1.49.

Drs. Ashurst and John present a very valuable paper on the Rational Treatment of Tetanus, describing twenty-three cases.

The same surgeons also present the findings and end results in the treatment of fifty-two cases of forearm fractures, treated without operation. This paper is well illustrated with numerous x-ray photographs.

Dr. Alexander reports results in the treatment of fifty-six cases of patella fracture. Dr. Ashurst also presents papers on injuries of the elbow and shoulder joints, also bone cysts of the humerus.

Dr. Eves' method of tonsillectomy is worthy of careful study. Several papers on abdominal conditions find place.

In all, a very valuable volume, a credit to the hospital and to the teaching staff, worthy of emulation by all scientific institutions.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Prof. Amory Hare, assisted by Leighton F. Appleton, M. D., Lea & Febiger, Publishers, Philadelphia and New York. \$6.00 per annum.

This is Vol. II-1913. The contributors are: Wm. B. Cooley, M. D., Hernia; John C. A. Gerster, M. D., Surgery of the Abdomen exclusive of Hernia; John G. Clark, M. D., Gynecology; Alfred Stengel, M. D., Diseases of the Blood, Diathetic and Metabolic Diseases, Diseases of the Thyroid Gland, Nutrition and the Lymphatic System; Dr. Edward Jackson, Ophthalmology.

These famous writers have not only contributed from their own large experience but from the contributions of the leaders in medical thought, collected from the best medical literature. This volume is illustrated by more than 130 figures. These volumes are not made up of abstracts but are digests of the subjects presented. For instance, hernia includes 67 pages, surgery of the abdomen, 120 pages. We have found these volumes of great aid in furthering our knowledge, and also in preparing papers for medical societies.

Malaria, etiology, pathology, diagnosis, prophylaxis and treatment. Graham E. Hennon, M. D., member A. M. A., Florida Medical Association, American Society of Tropical Medicine, Medical Reserve Corps (U. S. A). Introduction by C. C. Bass, M. D., Tulane University, New Orleans. Twenty-seven illustrations. C. V. Mosby Company, St. Louis, 1913. Price \$2.50.

A companion volume to those on Arteriosclerosis, Meningitis, etc, issued by this publishing house.

The completion of the Panama Canal has, through the sanitary department, proven that endemic diseases may be controlled and eradicated. An impetus has been given to the study of Malaria in the southern states.

This volume is a commendable attempt to bring up to date our knowledge of this disease. The subject matter is well arranged, and also as the title indicates, is thorough and complete.

As the others of this series, the book is well printed and well illustrated, worthy of your attention.

Collected papers by the Staff of St. Mary's Hospital (Mayo Clinic) 1912. Octavo of 842 Pages, 219 illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$5.50 net.

The sixth volume of the collected papers of the Mayo Clinic, contains all the papers written and presented for publication during 1912. This plan brings the book up to date.

This volume contains sixty-nine papers, written by twenty-three members of the staff. The contents consist of papers on the Alimentary Canal; Hernia; Urogenital Organs; Ductless Glands; Head, Spinal Column, and Extremities; Technic; and General Papers. The papers deal not so much with rare and unusual conditions as are found at any large clinic but with the common run of material as seen by the general practitioner. Numerous photographs, tables and charts embellish the text.

Again and again is the reader impressed with the importance of careful history-taking; routine, thorough examination; test meals and skiagraphy wherever and whenever indicated; and a correct interpretation of the collected data.

A volume worthy of every progressive physician's study.

At Albia, Iowa, on September 25, there was held a joint meeting of the Mahaska, Marion and Monroe County Medical Societies. The meeting was called to order at 11 A. M. by Dr. G. A. Jenkins, Pres. of the Monroe County Medical Society. Dr. Taylor R. Jackson, Secretary of the same Society, acting as secretary.

The first paper was entitled Scarlet Fever, by Dr. J. M. Weiss, of Knoxville. This was a very able and practical paper. The subject of the second paper was Bacterins by Dr. G. A. Jenkins, Albia. This was a very scientific paper, covering the subject excellently. These two papers were then discussed. Dr. Weiss's paper being discussed by Drs. C. W. Cornell, Knoxville; T. R. Jackson, H. C. Eschbach, C. B. Powell, and G. A. Jenkins, Albia; M. Childress and J. G. Roberts, Oskaloosa; L. E. Park, Tracy; E. C. McClure, Bussey; and in closing by Dr. Weiss.

Dr. Jenkins' paper was discussed by Drs. J. G. Roberts, F. J. Jarvis, M. Childress, Oskaloosa; C. B. Powell and R. P. Miller, Albia; E. C. McClure, Bussey, C. W. Cornell, Knoxville; J. W. Osborn, Des Moines; and in closing by Dr. Jenkins.

The meeting adjourned at this time for luncheon, to be called to order again at 2 o'clock, when Dr. L. E. Park, Tracy, read a very interesting paper entitled Conclusions reached in thirty years practice. This was discussed by Drs. J. G. Roberts, Oskaloosa, and C. B. Powell, Albia. The subject of the next number was Pelvic infections in the Female by Dr. T. A. Moran, Melrose. Dr. Moran handled this difficult subject in a very able and practical manner and his paper was discussed by Drs. S. T. Gray, R. P. Miller, C. B. Powell, T. J. Avery, and H. C. Eschbach, Albia; M. Childress, and J. G. Roberts, Oskaloosa; S. M. Magarian, Hite-man; C. W. Cornell, Knoxville; L. E. Park, Tracy; E. P. Bell, Pleasantville; and in closing by Dr. Moran. The title of the next paper was Chorio-Epithelioma with Case Report, by Dr. M. Childress, Oskaloosa, Dr. Childress gave a very graphic and comprehensive description of this disease, calling especial attention to its method of onset and to the importance of early diagnosis. This paper was discussed by Drs. H. C. Eschbach, J. G. Roberts, and J. W. Osborn. Before the noon adjournment a motion was carried that there be a committee of three appointed to consider the advisability of making some plan for joint meetings of the Mahaska, Marion, and Monroe County Societies. The chairman appointed on this committee, Drs. C. W. Cornell, Knoxville, A. C. Spurgin, Oskaloosa, and H. C. Eschbach, Albia.

This committee reported recommending that in order to stimulate greater interest in medical subjects, these three county medical societies meet annually, at Oskaloosa in November, at Knoxville, in May and at Albia in August; that a president be elected and that the president with the Secretaries of the societies be the committee on program for the tri-county meetings; that the secretary of the society in the county where the meeting is held act as the secretary of that meeting; that the expenses of each meeting be born by the county society in whose county the meeting is held; that membership in the county society automatically include membership in the tri-county meetings. These recommendations were unanimously adopted and Dr. E. C. McClure of Bussey was elected President.

The South Western Iowa Medical Society met at Creston, Sept., 4th, Dr. T. W. Bennett, of Lenox, presiding.

The President's address was very interesting, in that it deviated from the usual route of such papers, and took us with him in his last winter's trip through the sunny Southland.

His paper showed us that while he might have been there on pleas-

ure bent, that he was still the man of science that we know him to be, for while there he was cultivating, at a safe distance, of course, the acquaintance of the busy musquito, and the indolent hook-worm. He brought a few healthy specimens of the latter along with him, and introduced them to the Society.

The paper of Dr. John W. Peck, of Des Moines, on The "Early Diagnosis of Tuberculosis" was well worth the hearing, and showed that some considerable study had been spent upon it, with the purpose in view of making it as condensed as possible, and yet be comprehensive enough to cover the ground.

The next paper was by Dr. C. H. Mitchell, of Leon, Ia., and was on "The Differential Diagnosis of Gall Stones." This paper showed the Doctor's usual thoroughness in preparing a paper, and it was well received, and ably discussed.

Dr. Frank A. Ely, of Des Moines, next read an exhaustive paper on "Subtentorial Tumors." It showed that the most of us do not know much about the brain. It showed very careful and exhaustive study, and should have been heard by a hundred more than were there.

The paper on "A Study of the Heredity of Feeble-mindedness," by Dr. Jeannette F. Throckmorton, of Chariton, was a most interesting paper. It would be impossible to convey any idea of its importance in a short notice like this.

After the program was ended in the auditorium, we adjourned to the basement of the building, the First Baptist Church, where an elegant supper was served by some of the fair members of that organization.

Here the most of us forgot, for a while, all our troubles, and reveled in some of the less ethereal pleasures of life.

If possible, we expect to have a better program when we meet at Corning next year.

The following officers were elected for the ensuing year:

Dr. B. L. Eiker, Leon, Prest.

Dr. Wallahan, Corning, 1st, Vice Prest.

Dr. Beadle, Creston, 2nd, Vice Prest.

Dr. Enos Mitchell, Weldon, Sect-Treas.

The regular meeting of the Wright County Society was held at Eagle Grove on Tuesday, Sept. 16. The members of the Hamilton and Humboldt Societies were invited and quite a number from each Society were present.

Dr. Arthur Steindler of Des Moines, gave a lecture on the Treatment of Lateral Curvature of the Spine, which he illustrated with lantern slides. He dealt particularly with the Abbott method of treatment. His lecture was followed by a short orthopedic clinic.

Dr. Walter Bierring then followed with a medical clinic. There was an abundance of material and Dr. Bierring gave a very entertaining and instructive clinic.

Dr. W. C. McGrath then gave some lantern slides on fractures, which he had prepared himself. Some of the pictures were of fractures of years standing showing considerable deformity but unimpaired function.

The meeting was adjourned and all went to the Occidental Hotel where a banquet was served.

By all of those present, the meeting was considered one of the best that the Wright County Society has ever held.

The annual meeting of the Bremer County Society was held in Fraternity Hall, at Waverly, September 9. The following officers were elected;—President, F. A. Osincup, Waverly; Vice President, M. N. Gernsey,

Readlyn; Secy.-Treas. Harry H. Ennis, Tripoli; Board of Censors, L. D. Jay, B. C. Dunkelberg, and C. H. Graening.

Dr. J. F. Aumer read a most interesting paper on Anesthesia from the standpoint of the general practitioner, which was freely discussed by the society. Dr. R. E. Robinson read a very interesting and instructive paper on Some of the inner Ear Complications of the Infectious diseases, which was followed by a general discussion by the society. After the scientific program, dinner was served at the Fortner House. The next meeting will be held in December.

The American Association for Study and Prevention of Infant Mortality will meet in Washington, D. C., November 14-17.

The program will include sessions arranged by chairmen of standing or special committees and popular meetings, which will be addressed by distinguished specialists from various parts of this country. The subjects which will be discussed include:

Eugenics.

Pre-natal care and instruction of mothers.

Adequate obstetrical care.

Problems of infant hygiene and infant feeding.

Standards of training for infant welfare nursing.

Continuation schools of home making.

The relation of vital statistics to plans for social betterment.

The relation of the plans for the conservation of infant life to the general ideals of conservation.

The Botna Valley Society held its annual meeting at Avoca, August 21st. There was a good attendance and the meeting was a splendid success, every number of the program being read.

Program: President's Address, Dr. Frank Hannah, Walnut. The X-Ray as an Aid to Diagnosis, Dr. E. A. Merritt, Council Bluffs. Neurasthenia and Psychasthenia Incident to or following Trauma, Dr. I. M. Barstow, Council Bluffs. Report of an Interesting Case of Tetanus, John Riley, Exira. Modern Methods in the Treatment of Purulent Otitis Media, Dr. L. L. Henninger, Council Bluffs. Report of a Case, Dr. C. Giles, Oakland. Sphygmomanometer and its Aid in Diagnosis, Dr. C. F. Deitz, Tabor. Pituitary Extracts in Obstetrics, Palmer Findley, Omaha. Abscess of the Frontal Lobe of the Cerebrum with Unusual Complications, Dr. Patten, Omaha.

The Appanoose County Society met at the Drake Free Public Library, Wednesday, Sept. 24th.

Program:—

"What may be done by the city authorities to prevent contagious and infectious diseases", Dr. G. F. Severs.

"The co-operation of the physician in preventing the spread of contagious and infectious diseases", Dr. W. A. Harris.

Resume of Dr. J. L. Sawyers' paper on "Hygiene".

Report of committee on any clinical cases presented to the Society.

Page County Society held its regular meeting on September 18, at Coin. Program; Blood Pressure, Dr. J. F. Aldrich, Shenandoah. Paper, Dr. R. A. Hawthorne, Braddyville. Report of State Meeting, Dr. T. E. Powers, Clarinda. Impressions of A. M. A. at Minneapolis, Dr. R. J. Matthews, Clarinda. Paper, How can we arouse more interest in the County Medical Society, Dr. Edward Luke, Coin.

The September meeting of the Mahaska County Society was held September 17, Dr. E. M. Williams was admitted to membership on transfer from the St. Louis, Mo. County Medical Society and Drs. Traister and Gillet were elected to membership on application. The Society recommended to the city Council of Oskaloosa that Dr. Herbert E. Eisler, Superintendent of the practitioner's laboratory, Chicago, for twelve years, be elected city bacteriologist and health officer vice Dr. Mark F. Boyd, resigned, to do post-graduate work in Harvard University where he has been awarded a fellowship in preventive medicine. The city Council has since elected Dr. Eisler City Bacteriologist and Health officer.

Drs. W. L. Bierring, G. H. Sumner, of Des Moines, Ia., and Henry Albert of Iowa City, and Prof. Lafayette Higgins, Des Moines, of the State Board of Health attended the meeting of the American Public Health Association held in Colorado Springs, Sept. 9-13th. Dr. Albert presented a paper on the subject "The Incubation Time of Diphtheria Cultures".

The Polk County Medical Society met in Des Moines, Tuesday, September 30, at 8:30 p. m., at Savery Hotel.

PROGRAM.

Some limits in the operability of malignant neoplasms,—F. Rosenblatt, M. D. Contracted pubes in obstetrical cases,—J. R. Condon, M. D.

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No. 5.

CHAIRMAN'S ADDRESS

CHAS. B. TAYLOR, M. D., What Cheer.

Section in Medicine, Iowa State Medical Society.

To make a simple review of the literature of the year does not particularly appeal to me for two reasons. First: It could only be a brief synopsis. Second: It anticipates many things which are more elaborately discussed by the various authors of the section.

Therefore I have chosen a line of thought which will probably seem to many as peculiar; and my only hope is that you will not criticize too severely.

If I should select a name for this address it would be "A plea for more and better study along the lines of general medicine."

Our state has a population of approximately two and one quarter millions of people, with 3653 physicians. Our largest city has a population of less than 100,000. Our second largest city a population of less than 50,000. In other words our population is not concentrated into large cities but rather distributed over the whole area of the 56,000 square miles. For these physical reasons alone, the vast majority of the 3,600 physicians are doing general work; and by that I mean; a little surgery, and a large amount of medical work.

It would be interesting to know what percentage of the 3,600 physicians study, attend societies and do post graduate work. The presumption is that not more than 1,900 do any one or all three; there being only that number as members of the state society.

What is the bent of mind of the 1,900? Very largely surgical.

The executive committees of the state society have recognized this in the past and have now solved the attendance upon sessions

problem by alternating the papers on medical and surgical topics in the same sessions, in order to avoid the necessity of arranging for an over-flow meeting in the surgical section while the medical section is largely neglected.

What can be said of the most of us when we go to Boston, Chicago, Philadelphia, New York and Baltimore for special work? All I know is that the surgical clinics are always well attended while the internist clinician is largely holding converse with himself.

Granting then that my conclusions are correct; both that we are a body of general practitioners doing but proportionally a small amount of surgery and secondly; that our study and special work is largely surgical—can we say that the condition is normal and healthy?

The study of physiology and pathological processes of surgical diseases is the same whether for the internist or the surgeon. The study of diagnosis is identical for surgeon and internist in these same diseases. Thus far they are on common ground and there would be no attempt made to divorce them. But should the general practitioner, who is doing probably from eighty to ninety-five per cent of internal practice and from five to twenty per cent of surgical practice, devote a major portion of his time in study of technic of the comparatively few surgical diseases, to the neglect of the study of the treatment of the vast list of diseases which are and will always continue to be medical?

There is something rather more startling and therefore more fascinating in surgical performance than in the quiet administration of medical procedure.

It appears that surgery is more aggressive; that there is more evidence of positive results. In fifteen minutes the appendix is removed and there is no more appendicitis. The gall, kidney and bladder stones are exhibited and the symptoms are relieved. Mathematical and mechanical accuracy are put down on the surgical side of the ledger while empiricism and a small amount of scientific accuracy is noted on the medical side.

The disparity in the fees may have its bearing. The internist makes his diagnosis of diphtheria, administers the anti-toxin, all within twenty four hours and saves his patient. He receives for this good work, five dollars. His brother surgeon is called to a case of appendicitis which was previously diagnosed by an internist within the twenty-four hour limit, the surgeon operates and returns home, singing psalms of praise, bearing a check for one hundred and fifty. Most anybody can sing for one hundred and fifty but he must be an optimist to be able to sing for five. But in this as elsewhere, things are not always what they seem, and it is probable that the surgeon could often enlighten the internist on the matter of fees if he only saw fit.

Again the feeling of the average layman, that the surgeon be-

longs to a higher cast, has its bearing upon the physician. The layman approaches the surgeon with fear and trembling; while with his physician there is almost a fraternal intimacy. These are some of the causes why surgery appeals to the physician.

But is surgery all accuracy and scientific? Within a very small area in the upper abdomen the surgeon has to contend with duodenal ulcer, gastric ulcer, cholecystitis and cholelithiasis, chronic pancreatitis and carcinomata upon any one of these sites. Does he always know? Is he never uncertain? With the very best knowledge at his command, does he not very often bulletin his case—laparotomy? Is he always certain of his procedure in the pelvis, where he must differentiate between tubal, ovarian, uterine and even appendiceal pathology? When the wills are probated does not the estate of the internist compare very favorably with that of the surgeon? Upon whose demise do we find the largest number of real mourners? In this last item the family physician heads the entire list.

The subject of internal diseases is rapidly becoming a science. There has been no greater strides in any department of scientific thought than in the field of internal medicine. Forcheimer says: "Not very long ago the basis of all therapy was empiricism and empiricism only." But the laboratories of the world have been put in motion. Tens of thousands of eyes have been looking down as many microscopes studying normal tissues and the changes occurring from disease. Physiology has been given a new impetus, and over and above all the cause of diseases has been the central thought. The cause once known, then prevention and scientific therapy follow as night the day. Havana, Florida, Louisiana, Panama, are made more habitable than Iowa, by a scientific application of what was learned in the laboratory. My prophecy is "That in twenty five years, tuberculosis will be reduced seventy five percent by prophylaxis alone even though no positive remedial or immunizing agent be found. Prophylaxis is one of the largest fields for the internist."

Because one child develops measles it is not essential that every other child in the town or city should also develop measles; with its otitis media and pneumonia, conjunctivitis, endocarditis, empyemia, meningitis and brain abscess complicating; as frequently occurs. It remains for the internist to inculcate this doctrine which includes all of the infectious and contagious diseases. And the physician who is not willing to accept this responsibility is not worthy of his calling. People learn slowly but they do learn in time.

In this line of thought I wish to quote Dr. Jepson; for he expresses a very large element of truth when he says: "The internist has, in so far as therapeutics is concerned, to do with the pervention of, rather than the cure of diseases. His is the duty to advise his patient as to what his relation to his environment shall be, that is, instruct him how to properly maneuver his body in its environment

in order to get the most out of it with the least wear and danger of wrecking it. Thus the highest duty of the internist is that of counseling men how to live—that of surgeons to patch them up if possible, when suffering a physical breakdown—just mechanics.”

I do not know that Dr. Jepson means to state it quite as strongly as it sounds, viz: that the whole work of the internist is to prevent and instruct. This is certainly a great part of his work. But I am not yet willing to take the complete nihilistic view that we have no therapeutic agencies. Quinine surely is destructive to the myasma of malaria. Mercury and potassium iodide have at least lessened the virility of the spirochetes to say nothing of what is being accomplished by salvarsan.

I believe serum therapy has a brilliant future. It is now only in its infancy. Its administration at present is largely a matter of guess—but the time is not far distant when the scientific application of this therapeutic agent will be an established fact.

Thus the field for the internist is a wide one. He is instructor; the Advisory Board in matters pertaining to all bodily functions. It is he who teaches sanitation. It is he, who, when the body is invaded by destructive micro-organisms by timely remedial measures aids in fortifying the body to meet the onslaught.

I believe the star of the internist is in the ascendant. As a matter of personal inclination I like surgery best. But surely the greatest work of the future will devolve upon the internist. It will be his work to learn how to prevent lithiasis; to instruct in the matter of living so that typhoid and acute gastro-intestinal infections will occur less and less often and the resultant gall stones less frequent.

It will be his work to solve the cancer problem. Today it is a surgical disease and surgical only and yet how inadequate is surgery to cope with it.

Suppose a cancer of the jaw. It is not possible to remove all the submaxillary, sub-lingual and cervical glands and yet the surgeon knows he must do so.

Suppose a cancer of the breast. The surgeon has mutilated his patient more than he ought and yet he finds that there are metastases which he has failed to reach.

Presume a cancer of the uterus—he has dissected to the bifurcation of the aorta, and sees his cancer reappear.

Whether the cause is to be found in dietetics or in the realm of the infections, if the cancer problem is ever solved adequately, it will be through the mediation of the internist and not by mechanical interference.

It was my belief that the field of the internist would be an ever widening one; and that any word of encouragement which might lead my fellow physicians to become more active workers in that

field, would not be misplaced, which prompted me to this kind of paper.

In a letter directed to a number of internists and surgeons alike, I propounded a few questions bearing upon the relative importance of surgery and medicine.

I had two objects in view. First: to learn whether these men believed, as I, that the field of the internist was growing out of proportion to that of the surgeon. Second: I wished to add my little weight toward encouraging more study in the diagnosis and scientific care of general diseases from surgery.

As I said in the beginning we are better instructed in surgical diagnosis and technic than are in the diagnosis and treatment of non-surgical diseases.

Were we to go before the state Board of Examiners today, we could pass a much better examination in surgery than in medicine.

The following are the questions asked:

1. What diseases or pathological conditions which have hitherto been referred to the surgeon that now must be solved by the internist?

2. What diseases or pathological conditions which have hitherto been considered as belonging to the internist are now referred to the surgeon?

3. Is exophthalmic goiter a surgical or medical disease?

4. Is cancer a surgical disease? If so, in what organs?

5. Is tuberculosis a surgical disease? If, so, in what organs?

6. Do gastric and duodenal ulcers belong to the surgeon or the internist?

7. Will fibroid tumors of the uterus respond to any other than surgical treatment?

8. Is the field of the surgeon enlarging or is it contracting?

It would be interesting to quote fully the answers to these questions but that is impossible in this length of paper. Of exophthalmic goiter, Dr. J. B. Murphy says: "When properly handled in its very earliest stage I believe it is curable by medical means such as arsenic, x-ray, etc. If it continues to increase in severity it should rapidly become a surgical disease."

Dr. C. P. Howard says: "Medical in its early stages and throughout in a large proportion of cases."

Dr. Will Mayo says: "In certain stages a surgical disease but not under all circumstances."

Dr. Jepson has so kindly injected into these answers his theories on practice that I wish I might read his entire letter. Regarding exophthalmic goiter he says: "Until we have discovered the factors which bring about increased thyroid secretions, furthermore have acquired means of removing such cause when found, and until we shall have discovered some means of checking the function of the gland at will, we must, often in the extreme hyperthyroidism rely

upon surgical management of this condition, even though it is not placed upon a very rational basis." You note that Dr. Jepson is hoping for other solution than surgery for this troublesome disease.

Dr. Howard Kelly's answer is that it is first medical and if not relieved then surgical.

Dr. Littig says: "Both."

All say that cancer is a surgical disease except that Dr. Kelly says: "Ninety six per cent of skin cancers are cured by radium."

In regard to tuberculosis—Dr. Kelly says: A surgical condition in some locations, such as bones, tuberculosis of one kidney, etc."

Dr. Jepson believes it is a surgical disease and should be the object of direct attack, when possible, where nature has failed after a reasonable time.

Dr. Murphy says: "Tuberculosis of joints, tubes, tuberculous enteritis, and of bones is surgical."

But tuberculosis of glandular system (non-suppurative) and of the peritoneum should be returned to the medical man.

Dr. Mayo believes tuberculosis is surgical wherever it can be attacked.

Regarding gastric and duodenal ulcers: Dr. Jepson says: Early stages not operative, when chronic then surgical. Dr. Littig says: surgical only. Dr. Howard says: First to the internist except in cases of perforation—in obstinate cases which resist diet and medical treatment, then surgery is necessary. Dr. Howard believes certain cases of gland tuberculosis is surgical differing in this respect from Dr. Murphy.

All say that fibroid tumors of the uterus belong to surgery if any treatment at all is needed, except Dr. Kelly who says that fibroids respond to x-ray treatment.

Dr. Cabot of Boston says: that the field of the surgeon is "enlarging—partly without good reason."

Dr. Jepson says in general the field of surgery will tend to increase but that the field of the internist is going to have a greater scope of activity as he will be the instructor and advisor of the intellect which manages the machinery. This, he says, cannot occur until they (the internists) emancipate themselves from their drug fetishism."

Dr. Littig says: "I cannot help but feel that the medical field is constantly narrowing and that it is going to be still narrower in the future and that the surgical field is enlarging."

Dr. Murphy says: "The field of the surgeon is contracting and if I were about to study medicine I would take up internal medicine as I believe within the next twenty years it will outclass surgical progress."

Dr. Howard says the surgical field is enlarging.

Dr. Mayo says: "The field of the surgeon is enlarging but not as rapidly as that of the internist."

Dr. Kelly says: "The field of the surgeon is certainly steadily enlarging and not diminishing."

You note that the views of these eminent practitioners differ regarding the relative fields of medicine and surgery. That is to be expected.

But this much we know: We should equip ourselves best for the work we are doing most—and that is: general practice.

In the beginning of "Paradise Lost" you remember that Milton implores aid of the Spirit in these words: "That which is dark within me—illumine. That which is low—raise and support."

Let this be our thought.

MECHANICAL OR FORCEP DELIVERY*

NATHAN C. MORSE, M. D., Eldora.

The history of the discovery or use of the obstetrical forcep is, to say the least, entertaining. For many years it has been assumed that Peter Chamberlin, an English obstetrician, early in the seventeenth century was the inventor, and used successfully his crude instrument which, owing to the great revenue derived therefrom, was held as a family secret for many years. The fame of the Chamberlins became international. The physicians of this family were called on in difficult and delayed deliveries, but on such occasions would not use their instruments in the presence of other or attending physicians. They were frequently put to very severe tests and their failures in cases of contracted pelvis were loudly denounced. In 1723, Jean Palfyn, an obstetrician of Ghent, presented to the Academy of Paris, a pair of obstetrical forceps which he called "iron hands" very similar to those used by the Chamberlins and later claimed by members of that family as having been stolen from them. These forceps were later greatly improved by Levret of France and Smellie of England, and on these patterns are based all the various models in use at the present time. Pompeian archeologists have discovered amongst the ruins of that wonderful buried city a number of crude patterns of obstetrical forceps which, as attested by the late Nicholas Senn and other able physicians, prove beyond question that such forceps or instruments of this character or kind were in use before the Christian era.

The modern obstetrical forcep consists essentially of a pair of steel blades with long or short fixed handles. The blades having double curve, cephalic and pelvic, and are intended to clasp the

*Read before the Iowa State Medical Society, Des Moines. 1912,

fetal head and enable the operator to extract the child in certain cases of difficult labor when the natural powers are inadequate to expel it.

Of the numerous forceps or models now in common use in this country, the most prominent are known as the Simpson, Hodge, Barnes, Wallace, McLean-Tucker, etc. Of these the Elliott modification of Simpson's is possibly the most popular which, with the Tarnier axis-traction forcep, is usually considered all that is necessary by way of forceps to the average expert obstetrician. Before concluding this subject permit me to call your attention to the fact, that all modern forceps have the same Levret or Smellie mortice and tenon lock or articulation and all are dependent on the pelvic tissues to hold the blades in apposition when placed over the fetal head and, lastly, not one, with the sole exception of the Elliott, has any device whatsoever that tends toward preventing undue pressure on the fetal head.

There are two classes of practitioners who should not be permitted to use obstetrical forceps, the arrogant and the ignorant. The arrogant, reckless and careless, who in the effort to perform a "grand stand stunt" rips and tears adlibitum should not be excused or tolerated. I have met with instances where the obstetrical forceps should not have been used and also where after being applied were badly handled. I can recall a case where the forceps were applied after the head was born, the traction and torsion in the effort to remove the body of the child, causing complete rupture of the perineum and death of the child. The "man behind the gun," and not the instrument, is not infrequently to blame for many avoidable injuries and accounts for much of the prejudice against their use. In the hands of an ordinary careful operator who is versed or familiar with the anatomy of the pelvis and the mechanism of labor, the obstetrical forcep is one of the safest and most reliable adjuncts, equivalent to or on a par in importance with the proper administration of ether or chloroform in properly selected cases of parturition.

Functions of the forcep: The essential function of the obstetrical forcep is traction. In the language of Jewett, "the obstetrical forcep is intended solely to assist, replace or to supplement the natural expulsive forces." Its use as a compressor, lever or rotator is seldom justifiable and is always attended with more or less danger to mother and child.

Essentials to forcep delivery: 1st. A dilated or dilatable os. In emergency cases resort may be had to manual or forcible dilation or multiple shallow incisions of the lower border of the cervix.

2nd. The head of the fetus must be of normal size or compressible to a normal degree.

3rd. The pelvis must be nearly normal in dimensions.

4th. It is always desirable that the fetal head shall be at least

engaged in the brim of the pelvis or descended far enough to become fixed.

The ideal condition for forcep delivery is therefore a fully dilated cervix, a large roomy pelvis and relaxed perineum with low engagement of a normal head in a normal pelvis. But unfortunately such ideal conditions are not often present and therefore the operator must endeavor with patience and skill to bring about as nearly normal conditions as possible before resorting to mechanical assistance.

Many of our best authorities reject delivery by forceps, in favor of version, where the head is not engaged. The old rule, "Version before and forceps after engagement" is good theory but not always good in practice. In my experience of 38 years, I have met with a number of cases, especially in primipara where, having been called late in the case, I found the amniotic fluid had drained away with practically no engagement of the fetal head, the child being firmly invested by the uterus, the patient much exhausted and where version, it seemed to me, would be a very difficult as well as dangerous procedure. In such cases I much prefer to place the patient under anesthesia and by careful bi-manipulation gradually press or force the head down within the brim of the pelvis and have it held there until the forceps could be applied and with little risk, at least to the mother. As to the Tarnier axis-traction forcep, in cases of eclampsia or in high cases where it seems imperative for a speedy delivery and especially where we have reason to believe the fetus is not alive, the Tarnier axis-traction forcep may be used to very great advantage. In skilled hands this forcep may be of great value, possibly indispensable. But in ordinary hands it usually means death to the unborn babe and should only be used in emergency cases.

Indications for forcep delivery: I am aware this is a somewhat mooted question and open to discussion and honest difference of opinion. Individually I have no sympathy for the physician who for mere lack of time or personal convenience would resort to forceps or any other means to hasten a normal delivery. The welfare of both mother and child are the only possible factors to be considered.

The necessity for forcep delivery may be classed as major and minor. The major cases may more properly be considered complications of labor, of which the most prominent are hemorrhage, eclampsia, fetal distocia, prolapse of the funis, or in all cases and conditions where immediate delivery is essential to the life or welfare of the mother or child.

The minor cases may be indicated by exhaustion of the mother from prolonged labor or effects of slow cervical dilatation, uterine inertia, or where for any reason the pain ceases and the head being well down within the pelvis, further progress is arrested, the mother

becoming anxious, despondent, nervous, unstrung and pleading for relief. It is then that the forceps gently and skillfully applied under anesthesia will bring quick and safe relief to both mother and child.

In many cases, especially primipara, in an otherwise normal labor, the fetal head is often retarded or arrested in its passage through the inferior strait, or may lodge at the rim or outlet of the pelvis. It is exceedingly aggravating to the sufferer and if after one-half to one hour, despite powerful uterine contraction and strenuous muscular efforts on the part of the mother, the head remains stationary, I do not believe it is good practice to withhold instrumental assistance until the patient is utterly exhausted. I have long realized that exhaustion contributes greatly toward the possibility of sepsis, the natural powers of resistance being greatly reduced and the patient becomes more easily infected thereby. Before leaving this subject, let me remind you of the important fact, that where the mother's pulse rises to 120 or 130 I have ever found it to be a reliable objective symptom of rapidly approaching exhaustion or collapse. Symptoms of which in my opinion, always justify immediate mechanical assistance. In other words, low forcep delivery is frequently justifiable in minor indications, the high operations only on major indications. Show me the practitioner who boasts that he never uses forceps, and I will show you an arrant coward or ignoramus who, under the guise of letting nature have her way has forced many a good woman to undergo needless anguish and prolonged unnecessary suffering.

Dangers attending forcep delivery. The risk in forcep delivery is far greater to the child than to the mother. To compression of the fetal head by the forcep blades is attributed the greatest mortality, the most common results of undue compression being intercranial hemorrhage, meningitis, hemiplegia, psychical disorders and epilepsy later in life. Compression over the anterior angle of the parietal bones is supposed to be the most vulnerable point on the fetal cranium. Injuries to the brachial plexus, abrasions, indentations, lacerations and contusions of the scalp, face, eyes, are not uncommon after hasty or careless instrumental deliveries. This is not to be wondered at when you remember that all modern forceps are so constructed that when placed in position over the fetal head there is no mechanical contrivance to prevent undue pressure to the head, and it is but the natural law that where the blades are opened and not fixed, the harder the traction the greater the tendency to press the handles together and serious compression is often unconsciously inflicted by the operator. The most common injury to the mother, and by many often considered unavoidable, are lacerations of the cervix or vaginal walls, rupture of fourchette or perineum. Undue compression, therefore, of the head of the child is admitted to be the great source of danger in all forcep deliveries, often unintentionally and unavoidably done with the long heavy

steel forceps especially in the making of strong or forcible traction.

Rotation. This may be available in certain conditions in the hands of the skilled expert, but to the ordinary operator, attempts at rotation by means of forceps are a menace to both mother and child. Many authorities assert that rotation of the fetal heads by instrumental means through an arc of 180 degrees or even 90 degrees is attended with so much danger of laceration of the maternal soft parts as to rarely be justifiable. As a student, I was taught and have always practiced the removal of the forceps when the head was brought down and perineum was distended. This, I still believe to be a good sound and safe precaution with the ordinary or long forcep to prevent perineal laceration.

Other essentials to forcep delivery. It is also essential to a successful and safe forcep delivery to know the exact position or presentation of the fetal head. It is not always possible to fix or base your diagnosis on the fontanelles. In case of the slightest doubt, it is a very simple matter, as suggested by Prof. Wm. H. Taylor of Cincinnati years ago, to pass a finger around or over the occiput until you find and locate an ear, if you follow this procedure you will make few mistakes. This examination can best be made under anesthesia and permit me to say that any attempt to adjust or deliver with forceps without anesthesia savors more of brutality than good common sense. In applying forceps it should never be forgotten that traction in the median line with forceps adjusted transverse to the pelvis is never a safe procedure and rarely called for. The instrument should always be applied and traction made in the direct line of descent, that is, tilted to the right or left in accordance with the presenting position.

Very strong traction without any apparent progress is positive evidence of either, that the forceps are not properly adjusted in respect to the fetal head; that traction is possibly being made directly against the rim of the pelvis; the possibility of an abnormally sized fetal head; or a contracted pelvis, all of which must be carefully considered before applying horse power. I have several times succeeded where others have failed after very strong traction, by simply placing the patient in the English position, on her right side, and thus changing the line of traction. Strong traction to such an extent as to cause repeated slipping of the blades from the head of the child is not good surgery and self evidence of improper adjustment of the forcep blades. Up and down or see-saw motion of the forceps is mentioned only to be condemned as absolutely unsafe and dangerous to the mother. A gentle swaying side to side motion is often of great benefit and legitimate.

Before closing this part of my subject, permit me to say that I object most emphatically to any undue exposure of the mother at any time during her confinement. I am well aware it is popular in some of our Eastern Clinics, but nevertheless it is to me a revolt-

ing custom, indecent immoral, disrespectful and unpardonable, a practice which tends to destroy the privacy, the purity and the sanctity of motherhood. The operator has nothing to gain from ocular inspection and, except possibly in very difficult high or major operations, no exposure is necessary in the introduction or adjustment of obstetrical forceps.

Modern obstetrical forceps mechanically considered. Before commencing this phase of the subject I want to say by way of preface, that operative obstetrics as practiced in our large Eastern hospitals and cities, is a very different proposition to the practice of obstetrics in our small towns or country at large. In the hospital or city practice you have every convenience, the patient is placed on a solid slab or table, easy of access, and you have at your command able and trained assistants and no home folks are admitted. In private or country practice you are thrown wholly on your own resources with willing, unskilled but critical assistants. The patient is usually confined on her own cot or bed, a swaying woven wire mattress or spring bed, and the average mother, husband or friends will very strenuously object to having the patient removed or placed on a table.

Unfortunately for the mechanic all fetal heads are not the same size. Hence in the manufacture of obstetrical forceps the average head, or, more correctly speaking the average pelvis must govern the size and curve of the forceps. Every practitioner has his own particular forcep, one he is accustomed to use, and it can not be questioned that in the hands of an expert any kind of an old pair of forcep, tongs, or "iron hands" will answer his purpose. Hence it is not so much to the expert but the average practitioner these remarks are best suited. I have here, as you will observe a number of different forceps. It will not be possible to refer to all of them in detail; suffice it to say they are open to the same objection, entirely too heavy and cumbersome, loose locked and the long handles interfere with normal rotation and are often in the way.

The forcep I now show you is a new model only recently placed on the market. You will note it is well made and a handsome instrument, the blades are beautifully curved and finished. It is a modification of the old time Simpson forcep. Its weight is one and one-half pounds. However useful to the expert, in unskilled hands it is open to a serious mechanical or constructive objection. When the blades are introduced it is harder to lock or bring the blades within the fulcrum than the Elliott or other such forceps, but the spreading of the arms or handle bars (Fig. I at A.) when traction is made and the head approaches the perineum causes such a spreading of the fourchette or vaginal outlet that unless extreme caution is used, severe laceration of the soft tissue is likely to occur. It has been

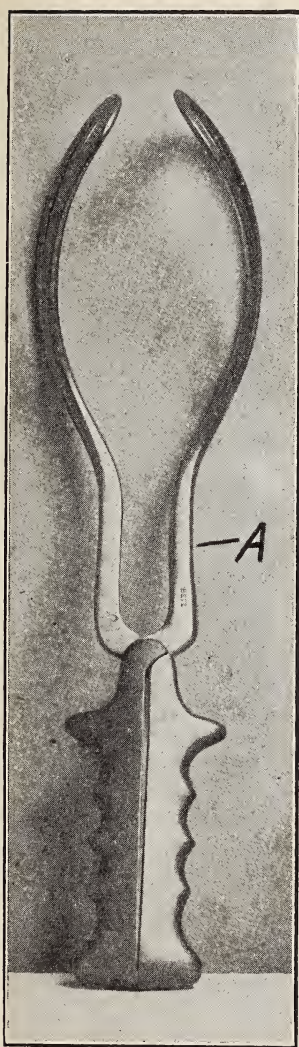


Fig. 1.

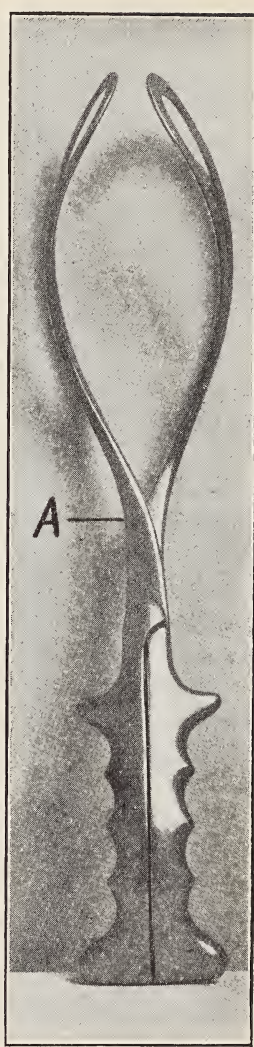


Fig. 2.

my personal experience that the handle bars on all forceps are far more likely to cause lacerations than the blades themselves. This spreading of the soft parts by the handle bars of the Simpson and other like forceps was noted by Hodge, Barnes, Elliott, Jewett and others, all of whom eliminated this feature in the construction of their forceps. The Jewitt forcep (Fig. 2 at A.) illustrates very nicely the point at issue. Again, as before stated, all modern forceps are loose locked and depend after adjustment upon the pelvic muscles or tissues to hold them in apposition. This loose arrangement is not always desirable for the simple reason that under anesthesia the muscles and tissues relax, and there is a tendency for the blades to slip and cause serious trouble, many times this can be avoided by the use

of a towel or cloth tightly wound around the handles. And, lastly the long, rigid heavy forceps always interfere while making traction with the normal rotation of the fetal head in descent of the child, and oftentimes the mere weight of the long forcep ($1\frac{1}{2}$ to $3\frac{1}{4}$ lbs) is sufficient of itself, without proper support to cause a rupture of the perineum. Nor is it possible to turn or move the patient safely, while the forceps are attached, without due care and precaution.

For a number of years I have been engaged in the effort to remove some of the objectionable features mentioned and have had constructed an obstetrical forcep which I have the pleasure to call to your attention.

In this instrument the total weight of the long forcep constructed of steel is $11\frac{1}{2}$ ounces. There are many cases where a short forcep can be used to great advantage. By removing the handles you will note we have at hand a very short forcep and the weight is reduced one-half. It is also mechanically true that the closer the object to the fulcrum, the greater will be the holding power, and the less interference with the normal rotation of the head. Again when the blades are placed over the fetal head, any desirable pressure can be made and the automatic lock will hold them in any position and this fixation prevents the slipping of the blades and the possible injuries incident thereto. Another important feature of special interest is the fact that it is impossible to lock the blades when placed in apposition, until the width or spread of the blades are closed sufficiently to pass through a normal pelvis. Therefore if the blades are placed over the head of the child and cannot be closed sufficiently for the lock to engage, it is conclusive evidence that the forceps are not properly adjusted or the head is abnormal in size.

The instrument (Fig. 3) which I now show you is the original or crude pattern. The new patterns are made with either automatic lock or a finger adjustable bolt, as the operator may elect. The adjustable finger lugs (Fig. 3 at A.) and all springs have been removed as unnecessary and unsanitary. The handle attachments have also been changed and rounded to overcome the points and sharp edges and to make them more firm and staple.

Principles of the Morse Forcep.

- 1st. An automatic lock or adjustable bolt to fasten or hold the forcep blades after same have been placed in operative position.
- 2nd. Detachable and interchangeable handles.
- 3rd. An interchangeable and attachable flexible handle. For double and axis-traction.
- 4th. A simple, safe and quick method of releasing the forcep at any time in any position.

The utility of these principles. A lock which fixes and holds

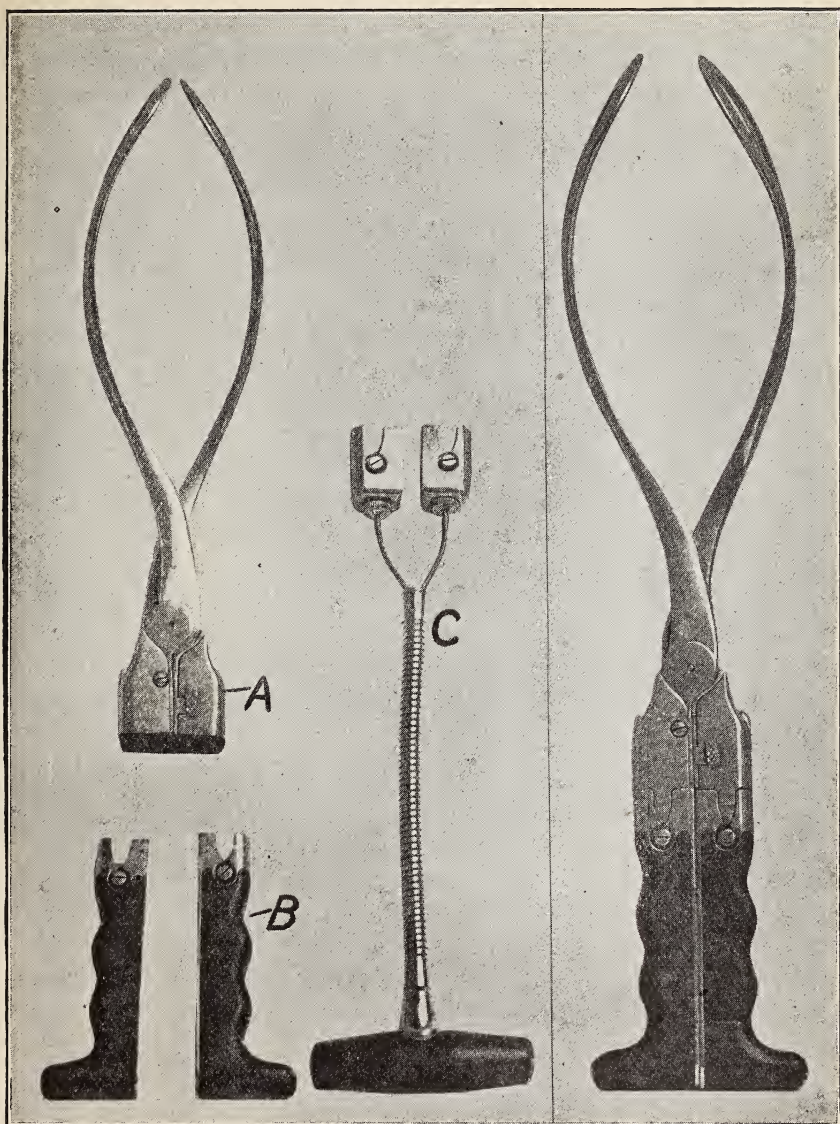


FIG. 3.

Morse Forcep. A Short Forcep. B Removable Handle. C, Long flexible handle.

the forcep blades in any desired adjustment within the limits of a normal pelvis, accomplishes the following results:

(a) it prevents slipping of the blades about the fulcrum while making traction, and the consequent lacerations which frequently follow this accident; (b) it prevents the crushing of the child's head through pressure exerted by the operator at the handles; (c) it allows the operator to apply the maximum amount of force without fear of injury to the child; (d) it enables the handles to be removed or changed when blades are in position without disturbing the ad-

justment of the blades; (e) it makes the forceps more safe for child as well as mother in the hands of inexperienced operators, the forceps being adjusted to a normal sized pelvis. They cannot be locked unless in conformity with the normal dimensions thereof.

Second. The detachable handles possess the following advantages:

(a) in all cases where only ordinary traction is required after blades are inserted adjusted and locked, the handles should be removed, thus allowing the operators greater freedom and the patient is not compelled to remain in the dorsal position; (b) when handles are removed normal rotation of the child's head is not interfered with on making traction, owing to the very light weight of blades; (c) removal of handles facilitates the making of traction in any desired direction without lacerating the soft parts, and in general practice, traction can be made while patient lies on an ordinary bed or spring mattress, regardless of her position, where long-handled forceps could not possibly be used; (d) the arrangement is economical, practically three forceps in one. Our pair of blades and two or more pairs of handles of different lengths and shapes take the place of an equivalent number of complete sets of forceps.

Third. The flexible attachable handle possesses the following advantageous features:

(a) when not required, it is not in use; (b) it replaces the rigid handles in high-pelvic cases, allowing normal rotation of the child's head regardless of traction exerted by operator; (c) it prevents laceration of the vaginal outlet ordinarily caused by the long and non-flexible handles, and the inability of the operator to properly govern the rotation of the forcep to correspond with the rotation of the child's head; (d) in forcible delivery or in double traction the flexible handles will prove of inestimable value. In breach cases the automatic lock is especially valuable.

Fourth. A simple, safe and quick method of release of the blades is a very essential feature. Prolonged or fixed pressure is never desirable. Pressing the button at "c" releases the blades which may thus be released and tightened during the descent of the head, at the will of the operator.

Vital features considered in the practical application of the principles. The "locking device" for both the blades and the handles are within the forcep body, and can not catch or tear the flesh. They are simple in construction.

Pelvic Presentations.

It is in pelvic presentations that forcep delivery causes so many fetal traumatism. Pressure of the blades over the iliacs is especially dangerous.

The Morse Forcep being adjustable to 1-32 of an inch is, therefore, of great value in regulating and controlling pressure. The

blades, when possible, should be applied over the trochanters with barely sufficient pressure to hold, and traction made during pains only, and assisted sometimes with pressure over the fundus.

Constructive Material.

The Morse Forcep is to be constructed as follows:

1st. Drop forged steel blades with nickle-aluminum handles, the total weight of forcep and handles shall not exceed 10 ounces.

2nd. Argentol, a new and patented combination of silver, zinc and aluminum. This metal possesses great textile strength and can be dropped forged and cast the same as silver or gold. The weight of the long forceps is estimated at $6\frac{1}{2}$ ounces, the blades alone at 3 ounces. The metal which I now show you is as springy as steel, and capable of a high polish and cannot be tarnished by strong solutions of acids or alkalis. They can, therefore, be sterilized as no other forcep can.

A SIMPLE METHOD OF CATHETER RETENTION AFTER SUPER-PUBIC CYSTOTOMY

LEWIS SCHOOLER, M. D., Des Moines, Iowa.

Every surgeon has experienced difficulty in retaining a catheter in the urethra for drainage purposes after supra-pubic cystotomy.

The method I have found to be the most satisfactory is to introduce a catheter through the urethra at time of operation, draw the end up through the wound and pass a silk-worm ligature through the catheter between the end and the eye, tying the free ends together, and withdraw the catheter sufficiently to leave the eye just inside the bladder, then pass a roll of gauze through the loop of the ligature, allowing it to rest on the line of the incision, thus forming a part of the dressing. This holds the catheter in place and the drainage in clean cases is perfect the patient is kept perfectly dry and the healing is not interfered with in the least, healing occurring by first intention in uninfected cases.

In infected cases nearly all the secretions will pass through the catheter into the urinal. The bladder can be irrigated through the catheter at pleasure.

When drainage is no longer necessary the ligature can be cut and withdrawn with the catheter. In partially open, or infected wounds the gauze roll can be changed as often as desired.

THE USE OF SUB-CONJUNCTIVAL INJECTIONS IN THE TREATMENT OF EYE DISEASE*

LEE WEBER, M. D., Davenport.

The object of this paper is to call attention to an old and much neglected method of treatment, the value of which seems to have been but little appreciated by ophthalmologists. It shall be principally a report of cases and the results obtained by this method of treatment. I shall not go at all into the history of the method, for any of you can get that from the literature as well as I can. The manner in which sub-conjunctival injections act in producing their effects is a debatable question. That it is the therapeutic action of the drugs injected seems very improbable, when we take into consideration the small quantity of drugs used and the results obtained. For instance, the amount of mercurial salt is too small to have very much effect on a syphilitic case, and in using sodium chloride injections in corneal ulcer cases it surely is not any antiseptic action of the salt that is beneficial. The theory that seems most reasonable and the one that I believe is correct, is that the beneficial action is due to the distension of the lymph channels by the solution injected, and the subsequent reaction of the tissues following this mechanical distension keeping up an increased flow of lymph for a considerable time after the first flushing by the injection.

The correctness of this theory is indicated by the edema of the surrounding tissues and by the more beneficial effects of large over small injections. If the effect were produced by drug action alone it would follow the injection of a given quantity of drug in a small quantity of water, which is not the case. The solutions that have been most used are the physiological salt solution, bi-chloride of mercury and cyanide of mercury in various strengths. The one that I now use more than all others is mercury cyanide in 1-2000 solution. This is sometimes increased to 1-1000 if there is not much reaction following the first injection of 1-2000. To the mercury solution is added cocaine, atropine or morphine in the dose desired. None of these alkaloids are precipitated by the cyanide as they are by bi-chloride, which is a great advantage. I have abandoned the use of small injections of three to five drops as formerly used, and always use two cc. of the cyanide solution plus whatever alkaloid I want. The injection of this quantity of fluid beneath the conjunctiva raises it from the sclera in a large blister like elevation which usually encircles the cornea and projects over it to some extent. The edema which quickly follows adds to this effect, so that in some cases the cornea is nearly buried in a few hours. The edema also includes the lids and sometimes the face to such an extent as to frighten the patient unless he has been told what to expect. The

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swelling always subsides without doing any harm and the only undesirable effect that I have ever seen is the adhesion of the conjunctiva to the sclera at the site of the injection, but this is a small matter and I am not sure that it ever does any harm.

The injections are made with the ordinary hypodermic syringe with a fine needle. The conjunctiva is first anesthetized with cocaine. The edema following injection lasts for several days, some times for two weeks, but this is unusual. A second injection is not given until the reaction following the first has subsided except in very severe cases. I formerly used the injections only in the most severe cases, after other means had failed to give relief; but finding that they were of assistance in such cases, began using them as part of the regular course of treatment instead of waiting and using them only as a last resort.

The cases cited are fair examples of their kind:

Case I. Corneal ulcer. J. H. Age 40—mechanic. Seen August 28th. Was struck in right eye ten days ago by small foreign body which imbedded in the cornea where it remained. There is a corneal ulcer four millimeters in diameter, very deep. Great edema of conjunctiva and lids, iris muddy and immobile. Pain very severe. Foreign body removed, ulcer curetted to clean surface and irrigated with bi-chloride 1-3000. Atropine instilled. Hot applications to eye. Morphine hypo. Aug. 29th—ulcer spreading in all directions, pupil a little dilated. Aug. 30th—same condition. Aug. 31st—no better; galvano cautery applied to ulcer. Other treatment continued consisting of irrigation, iodoform to ulcer, atropine, hot applications to eye, etc. Sept. 1st,—progress of ulcer checked. Sept. 2d,—ulcer again spreading and now involves nearly entire cornea. A sub-conjunctival injection of two cc. 1-2000 mercury cyanide plus 1-4 grain cocaine was given. Great swelling of conjunctiva and lids followed so that a lid elevator was necessary to open the eye. Sept. 3d—ulcer beginning to clean up. Sept. 5th—much better and from this time on healing was steady, and on Sept. 15th was entirely healed, leaving almost complete leucoma with no vision except perception of light. I believe that if the injection had been used sooner a better result might have been obtained.

Case II. Corneal ulcer—W. B. Age 28 laborer. Seen April 13. Large ulcer in center of right cornea with great circum-corneal injection, severe pain, some edema and mild iritis. The entire cornea dull and cloudy.

A one per cent cocaine solution was applied, and the eye well irrigated with bi-chloride solution 1-3000. Immediately a sub-conjunctival injection was given consisting of two cc. 1-2000 mercury cyanide with 1-4 grain cocaine, 1-4 grain morphine, and 1-100 atropine. Large edema of conjunctiva and lids followed so that it was necessary to use lid elevator in order to irrigate the eye at the hour intervals. April 14th, the pain was less severe, discharged less and

cornea around ulcer clearing. Improvement continued for three days, then became stationary in spite of other treatment, so on April 19th, a second injection of two cc. mercury cyanide was given with gr. 1-4 cocaine and gr. 1-8 morphine there was more reaction than after the first injection and on April 20th the lids were so much swollen that it was difficult to open the eye, but the ulcer was improving again and the healing progressed rapidly, and on April 30th, was entirely healed and the eye quiet and clear with a comparatively small corneal scar.

Case III. Syphilitic irido-cyclitis. Seen Dec. 13—C.W. Age 22. Contracted syphilis three years ago and was under treatment three months by his regular physician, then he stopped. Four weeks ago he began having pain in the left eye, which has become gradually worse, with progressively failing vision. Now has very severe irido-cyclitis, with iris adherent to anterior lens capsule, pupil occluded by exudate, considerable debris in anterior chamber; vision mere perception of light. He was placed on specific treatment and the usual treatment for the irido-cyclitis with no improvement whatever for ten days. On December 23d, he was given a sub-conjunctival injection of mercury cyanide 1-2000 two cc. plus 1-4 grain cocaine, 1-4 grain morphine and 1-100 grain atropine. There was a moderate swelling of the conjunctiva and lids which subsided in three days by which time all symptoms were less severe and synechia beginning to stretch. On Dec. 27th, was given an injection of two cc. mercury cyanide 1-1000 plus cocaine, morphine and atropine. Great swelling followed and within 24 hours a marked improvement took place. He was given a third injection on Dec. 31st, after which time the improvement was very rapid so that on Jan. 14th, the eye was clear and quiet, with iris free and pupillary area clear. Some pigment on anterior capsule at site of adhesion. Vision 20-30 corrected. He was under specific treatment all the time but the improvement in the eye followed the injections so closely and markedly that there was no question of their beneficial effect.

Case IV. Chorio-retinitis. Mrs. G.A. Age 30. Seen Jan. 19th. Gives history of syphilis eleven years ago with one year of treatment soon after infection. Present trouble began six weeks ago when eye became sensitive to light and vision began to fail. The symptoms have become progressively worse. Present time, tension, cornea and anterior chamber are normal, mild iritis, no synechia, vision, large objects: By ophthalmoscope, patches of irregular size and shape are seen throughout fundus, and a great number of floating opacities in the vitreous. She was placed on a vigorous anti-syphilitic treatment with atropine and hot applications to eye. This was continued for one month with a considerable improvement in the general health and the iritis subsided, but the condition of the fundus and vitreous remained almost stationary. On Feb. 20th, she was given a sub-conjunctival injection of mercury cyanide 1-2000 with

cocaine, morphine and atropine. Mild edema followed. On Feb. 24th and 28th, she had similar injections. On March 5th, the condition was much improved. On March 6th and 11th she was given injections. By March 20th, the vitreous opacities had all disappeared, and the patches in fundus had healed leaving only scars with no inflammatory activity. The vision when last seen was 20-25. The improvement in this case began within 24 hours after the first injection and was continuous.

Case V. Infected wound—A.R.J. Age 29—machinist. Seen March 3d. Was struck in left eye by flying piece of metal twenty hours ago. Has penetrating wound of eye ball in external ciliary region. Ciliary body prolapsed into wound which is infected. Pain severe; vision only light perception, edema opaque. The usual antiseptic irrigation and dressing were used with atropine and hot applications. The condition became worse and a very violent inflammation of the eye occurred, the treatment seemingly having no effect. On March 6th, he was given a sub-conjunctival injection of mercury cyanide 1-2000, two cc. containing cocaine gr. 1-4 and morphine gr. 1-4. The usual edema followed. The next day the condition seemed stationary, and on the second day a little better. On March 10th was given a second injection and within twenty-four hours a marked change for the better occurred in all the symptoms. He had similar injections on March 14th, 18th and 24th. The other treatment was kept up also. On April 3d, the eye was quiet and by April 15th, had cleared up entirely and vision was 15-20 with corrected refraction.

Case VI. Infected wound.—M.J. Age 16. Received penetrating wound of left eye caused by dirty wooden splinter on May 5th. Was seen on May 6th. Ragged punctured wound at outer corneal margin with iris torn and caught in wound. Anterior chamber collapsed and containing blood clots. Corneal wound edges dirty and covered with pus which filled the conjunctival sac.

The eye was cleaned as well as possible, the ragged iris in wound removed and immediately he was given a sub-conjunctival injection of two cc. mercury cyanide solution 1-2000 containing cocaine gr. 1-4, morphine gr. 1-4, and atropine 1-100. A moist compress was put on the eye and the patient put to bed. Great swelling followed the injection. On May 7th, the corneal wound was closed and the anterior chamber reformed. The case made quick and complete recovery after what seemed a hopeless situation. On May 15th, the eye was clear and quiet with irregular pupil and vision 15-40.

In using this treatment the benefit derived seems to be in proportion to the amount of reaction and edema following the injection. The greater the swelling the more marked the benefit.

SURGICAL PHYSIOLOGY*

J. T. McCLINTOCK, M. D., Iowa City.

Physiology is the science of life. The life of the individual is the sum of the various activities of the different cells which compose the tissues, organs and systems of the complex organism, and is also dependent upon a harmonious inter-relationship, and coördinate activity between these structures. Under the head of physiology a large mass of observations have been made, some of which have been explained; many are still without explanation. Hypothetical and theoretical explanations have been advanced, and in many cases have developed into laws, but there is still a wide field, not only in determining what the activities are, and how they are accomplished, but also as to what is the purpose of these activities in relation to the other parts of the organism.

Physiology is essentially a study of activities. With the death of the cell or organism the direct study of its physiology ceases, but by the study of the histological and chemical structure great progress can be made toward a better understanding and explanation of the phenomena of life. This is in fact the ultimate aim of such a study.

The great purpose in practical medicine, in all its varied branches, is to conserve the life of the individual, to restore normal function in activity between part and part. As in physiology, so in medical practice after death with the functional activities ended, there is nothing further which can be done except to study the structure, so as to be the better able to care for life where it may still exist.

All disease is in reality functional. It exists only in the living tissue. It may or may not be accompanied by structural or chemical changes, but the important thing is the alteration of normal function. This has been more clearly recognized in some lines of practice than others, but it is to primarily restore function that all therapeutic measures are undertaken.

The necessity for accurate knowledge of structure and its relationships, in order to properly perform a surgical operation, has given the study of anatomy an all important place. True progress in surgery, however, depends upon the progress that is made in physiology of the normal and abnormal tissue. Operative skill has, at the present time, reached close to its zenith of brilliancy. There is no structure which is not accessible to the skilled surgeon, yet the true value of the operation lies in whether, by such procedure, normal function may be restored without at the same time producing too great interference with other functional activities. To do this depends upon a better knowledge of function, as to what is, and how

*Read before the Iowa State Medical Society, Des Moines. 1912.

it is maintained, particularly the coördination of the vital processes.

We do not mean that the surgeon must wait for the physiologist to prove or explain some of his elaborate hypotheses or disclose new ones. Surgery itself has had much to do with the progress which has been made in our knowledge of physiological processes. It is not the source of our knowledge that is here important, but the necessity for more physiological facts and the influence they will have in the further progress of surgery and practical medicine.

The proving of the circulation of the blood by Harvey was of primary importance to the surgeon, and is one of the important monuments marking the beginning of modern surgery. Kocher removed the thyroid glands many times under the idea that they were useless remnants of earlier functioning structures; but not until after something of the vital functioning of these glands was understood could the surgery of them be undertaken without the fear of post-operative myxedema, and the localizing of a vital function in the parathyroids has given to them a surgical importance of the most vital character, and the surgeon is careful to see that they are not completely removed, or fatal tetany is sure to follow.

The functional importance of the internal secretion of the ovary and testicle in the nutrition and development of the individual has modified surgical procedures on these organs so obtaining the benefits, without the unpleasant and unfortunate post-operative conditions which were formerly obtained when an operation upon them became necessary.

The study of cardiac activity from the physiological standpoint is giving us a better knowledge of the limitations and possibilities in controlling the heart's action, and is paving the way for surgery here. In the work that has been done in the repair of injuries, and in the experimental work of MacCallum, and others in the production of valvular lesions and their repair we have an indication of what may be expected when we understand how better to control and resuscitate the heart action. At present the surgeon may have ten minutes for work on a quiet organ for return of activities after ten minutes heart stoppage is not uncommon, and in experimental work after much longer periods. When the physiology of this centre of activity is better known, it will not only permit of possible surgery of this organ itself, but be of great value in all surgical procedures.

The more exact localization of cerebral function has given the brain surgeon an almost positive assurance of the area upon which it is necessary to operate, and this makes possible the betterment of the individual by an operation which would otherwise be of questionable justification. Our present understanding of regeneration of the nerve fibre, histologically and functionally, has made possible the restoration of function in paralysis, not only by simple bringing se-

vered nerves together, but by crossing of nerve paths, and thus establishment of the part with new controlling centres.

The experimental work of Harvey Cushing upon the function of the pituitary gland is opening a new field for future surgery. The work of Dr. Carrel upon tissue growth, a physiological problem, is certain to be of great benefit to surgical success, that is tissue repair. His success in transfusion and suturing of blood vessels and transplantation of organs has been as much the result of a study of surgical physiology as of surgical technic.

Such examples, from among many others, are I think, sufficient to show the great importance of physiology to the progress of surgery. Professor Cushing says "the transformation of surgery from practice based almost wholly on anatomical knowledge of the surface and extremities of the body, to one based on the physiological activities of the viscera has come rapidly", and is we believe, the key to future progress. As more is known of function, new operations, will become possible, and old ones will be modified.

While anatomical knowledge is exceedingly important for the proper performance of surgical operations, physiology is not to be excluded, and I venture to say that where operative procedures are conducted with a greater regard for the fundamental physiological facts, better results are forthcoming than are ordinarily to be had. While anatomical knowledge is exceedingly important for the proper performance of surgical operations, physiology is not to be excluded, and I venture to say that where operative procedures are conducted with a greater regard for the fundamental physiological facts, better results are forthcoming than are ordinarily to be had. Whether it is the life of the individual or the function of some organ that is involved, we find it dependent upon a marvelously intricate and so perfectly balanced series of activities that even a slight alteration in one produces a change in others. The advantage of improved technic and operative skill lies largely in the fact that it permits of the primary purpose of the operation, with the least interference with other and perhaps more vital functions. In every operation some re-adjustment is necessary. The re-arrangement is often that of a compensatory action, and this may be of benefit or it may be harmful to the general condition of the patient, as it may be so extreme and so sudden as to completely upset the normal balance and thus interfere with the normal function or even life.

The study of compensatory action has received comparatively little study, but is of great importance in every operation. The response of the tissue to repair the injury is a fundamental form of compensatory activity, as is also the increase of leucocytes in case of an infection. Fever has been in this class of reactions for some time. The high blood pressure in cerebral compression is a response of the organism to protect the circulation in the vital centres. So also is the

high pressure in albuminuria, probably compensatory, although it is not so well understood. The study of coagulation, naturally a compensatory process but with an element of danger, especially intra-vascular coagulation, with the production of thrombi and the danger of emboli, the physiology of anti-coagulatory ferments and of thromboplastic substances is one of primary importance to every operation and its sequelae. The fact that the accessory muscles of respiration are necessary in pulmonary obstruction, and that their action is largely lost in deep anesthesia, calls for the proper protection of this form of compensation. Such are some of the compensatory actions, to say nothing of the more commonly recognized ones as kidney for kidney, stomach for intestines, rectum for bladder, and those existing between the internal secreting glands. The point is that in every operation the surgeon may have either a wonderful assistant or a terrible opponent in compensatory action, and they can be made use of or prevented when they are best understood.

Closely connected with compensatory activity we have another most important physiological action of considerable operative importance: that is reflex action. From the preliminary psychic reflex, all through the operation, in period of recovery and even long after, this form of physiological activity is constantly causing readjustment, and must be reckoned with in every operation.

It is necessary to mention only a few examples from among the many in which reflex activity is the prominent factor.

Pulling the tongue out is a common performance in resuscitation but when done too forcibly the process inhibits respiratory movements. Stimulation of the larynx directly has a similar effect. Stimulation of the peritoneum near the diaphragm or around the liver causes a reflex expiratory movement involving the abdominal muscles, forcing out the intestines, and as this reflex is not overcome by pushing the anesthetic, the anesthetist should not be blamed. Stimulation of the superior laryngeal causes the heart to stop, as does also too severe tension on the peripheral end of the carotid artery, as is sometimes done in holding this vessel out of the field of operation by retractors.

Afferent impulses from all parts of the body play a most important part in control of blood pressure, respiration and other vital functions. It makes no difference what theory of shock we accept, its ultimate cause lies in the constant and unusual afferent impulses that reach the medullary centres. In the commonly accepted theory of Crile, the afferent impulses, while at first causing an elevation of blood pressure, soon fatigue the centre, and then after removal of the unusual stimuli, those which are ordinarily responsible for maintaining the normal pressure are without sufficient effect.

Inhibition of the intestines after operation is also probably of reflex origin. The afferent impulse, either acting-upon the inhi-

bitory, or, as in psychic inhibition, it may influence such organs as the suprarenal glands, causing an excessive secretion, which would cause an inhibition of intestinal movements. Whatever the mechanism involved in shock, it is best avoided by preventing excessive afferent impulse, or by blocking the pathways. This involves the performing of the operation with regard to physiology as well as anatomy.

The respiratory function is of equal importance to cardiac and vasomotor in many surgical operations, and here again reflexes are most important in controlling and altering this functional process. The fact that the anesthetic is usually given by this channel gives to it a special need for careful attention. Respiration has not only to do with oxygen, but also with carbon dioxide, and that carbon dioxide is the stimulus to respiratory movements should warn us against the conditions which tend to cause continual hyperapnea by which excessive amounts of carbon dioxide are lost. Such a condition, with a low irritability of the centre from the anesthetic, and the small production of carbon dioxide, make it comparatively easy to produce a fatal apnea. We have had apnea last, without any sign of respiratory movement, fifteen to twenty-five minutes in experimental work, during which time we kept the blood supplied with oxygen by an occasional artificial respiratory movement. The production of hyperapnea, with its subsequent acapnia, is also dependent upon reflex stimulation. Any strong psychic condition, or the intense stimulation of afferent nerves, such as in dilatation of anus or the stretching and cutting of large nerve trunks, the handling of abdominal viscera causes intense hyperapnea, and it is after these conditions that sudden stoppage of respiration is most frequent. The stoppage of respiration in ether anesthesia, and shock preceeds heart stoppage. In some cases the cause may be the action of the ether in paralysing the centre. In other cases it undoubtedly is from acapnia. To recognize asphyxia, loss of oxygen, from acapnia, loss of carbon dioxide, is easy if we remember that in asphyxia there is a gradual elevation of blood pressure and slowing of heart, while in acapnia there is a fall of blood pressure and rapid heart up to fatal period. There can be no doubt that fewer accidents involving a primary cessation of respiration would occur if the physiology of this important process were made use of, and still fewer when it is better understood.

Such are but a few of the conditions wherein physiology is of direct value in performance of surgical operations. Many of you will be able to add others from your own experiences.

There can be no doubt but that where greater care is used to protect functional activity, to make use of it and not to abuse it, much better results will be forthcoming. It is encouraging to note the increasing attention which is being paid to the physiology of an operative case, and to the effect which the operation will have

in bringing back normal or in causing abnormal activities. In short, that there is something more important in surgery than the re-adjustment of anatomical relationships.

In closing I would again point out that in physiology, the science of life, of function, the why and how it is accomplished, we have the central factor in all biological study. That it may be the better understood and explained is the ultimate aim of medical research, and the preservation of this functional activity is the true aim in the practice of medicine and surgery.

Discussion.

Dr. E. Hornibrook, Cherokee: There is so much to be learned, the functions of so many organs to be discerned, worked out and understood. The next fifty years will have more progress, and the fifty years following still more. The young men of the future will be able to say, medicine and surgery have at last become exact sciences, while we are now only members of a speculative art.

The functions of the ductless glands are imperfectly understood. I just got through reading two volumes upon their functions, and I don't know anything about them. I hope sometime we will come to correct conclusions. All we know is simply to suggest active lines of thought for the younger and brighter and better trained men to follow. Now, we speculate about their functions. We do not know anything about them which is satisfying to me or to men who think more deeply than I do. In fact, I think, I had better stop now. I am in the position of the man who went to Dakota and saw a lot of barren land. After looking it all over, he said: Well, this is so barren, you can't even raise an umbrella on it. I believe I cannot raise new ideas enough on this subject to justify me in occupying the time of this society and exposing my ignorance.

Dr. Jabez N. Jackson, Kansas City: I think the doctor struck the keynote of what is going to be our main line of future progress. Some years ago, I heard it said, that surgery went through cycles; that there was a time when it was done by the butcher; then came a time called the anatomic period. My training was just then begun. About that time we entered upon the study of pathology and nothing was considered then but the microbes. If the patient died on the way, it was the misfortune of the patient. Now, we come to realize, when the patient has microbes, he has something else.

Along the lines of the practical observation of the laws of physiology, I believe, the greatest progress has been made in the last 10 or 15 years. It simply works itself out as a problem of preparation. I can remember when we put patients in the hospital before an operation and gave them calomel and salts, weakened them down, and then were surprised when we had a local infection. Now days, we come to realize that we get better results in our surgery, both as to mortality and final cure, if we disturb the patient's normal physiological equilibrium as little as possible.

Anesthesia has wrought a revolution in putting the patient to sleep, putting him out with a minimum amount of drugs, and a maximum amount of physiology and psychology. I believe in the last 10 years surgery has been revolutionized, not by the increased knowledge of pathology, because we have not gone so far along that line, but our mortality has been reduced mostly in the development of small things, by physiology, comfort of the patient, relieving him from the horror of the operation, smooth convalescence, etc.

I believe, along the lines suggested by the doctor in his paper is the true line of future progress. I enjoyed his most excellent paper very much.

Dr. J. R. Guthrie, Dubuque: I feel like thanking and congratulating the scientific committee of this society, both for the selection of this paper and the selection of the essayist. If we are to make rapid, real progress; if we are to occupy a commanding position on the highway of

surgical progress, it must come about in a very large measure, at least, from the study, investigation and intelligent discussions of questions like these. The correlation and intelligent co-operation of the allied sciences in medicine must be relied on finally for all true surgical progress. I feel thankful to the essayist for the clear and concise way in which he has brought to our attention food and thoughts that are worthy of our study and assimilation. The old idea with which we as students in medicine were familiar, was to the effect that anatomy was closely connected with the study of surgery, and that physiology was related only to the study of internal medicine. The later view, and I fancy, that which is more generally accepted is, that both physiology and anatomy must render their contributions, if we as surgeons are to properly approach the difficult surgical problems that today confront us and urgently demand solution.

It seems to me, therefore, that we are extremely fortunate in having this matter brought to us at this meeting at this time by a man who has given a great portion of his time to the study of these physiological problems. Truly, as he has said, the study of human physiology is the study of human life. If properly comprehended, it fills all our lives in all the varied functions of the physician and surgeon as well.

Since the days of Joseph Lister, what invention has done more to broaden the field of surgery and revolutionize surgical procedure, than the intelligent use of normal salines? The essayist referred to thyroidectomy and the present position it occupies in the world, and rightfully ascribes its success to the student of human physiology for putting upon a sound basis, the operation for the treatment of that condition.

Thirty-five years ago there swept through the civilized world the doctrine of Tait. Then there followed an indiscriminate slaughter of innocent ovaries. What was it stayed the flow of this sacrifice but the intelligent and persistent investigation of the functions of the ovaries and their relation to the nervous system of the patient, and which wrought out a revolution.

The study of the physiological function, the investigation of the functions of the brain, laid the foundation for cerebral localization, and cerebral localization created a new department in surgery,—cerebral surgery.

This paper shows clearly and concisely the importance which the great science of human physiology bears to the practical science of operative surgery, and is worthy, not only of our consideration and careful thought, but of our future study and investigation.

PROPHYLAXIS OF INSANITY*

MAX E. WITTE, M. D., Clarinda, Iowa.

This is a world of becoming, of change, of flow. Its essence is dynamic, not static. No chapter has been closed, but a new page is written each fleeting moment. That which is to be, has its seeds mainly in the influences active and operative to-day. In the loom of fate, the warp has its threads laid in the ever-receding past, the woof is supplied by forces coming and going all about, the shuttle flies to and fro, and the web is rolled into being, as a pattern of transcendent beauty, or a fabric of little worth in the final design of the Master weaver.

The spirit of man has a potent, but not all-powerful influence in shaping his destiny. This must be borne in mind when we speak of the prevention of insanity.

In insanity, we cannot justly speak of the cause, but rather of causes. Usually the insane condition is the resultant of several unfavorable influences, acting as components. Insanity is a diffuse disease of the cerebral cortex, involving more particularly the associational fibre system. It has as a rule its etiological roots in degeneracy, that eddy or backward current in the stream of life, and as we know from other fields of degeneracy, inheritance plays a role of paramount importance.

Now, be it understood that insanity as such, is not transmitted from parent to offspring, but rather a constitutional weakness or lability of the psychical neurones, is thus conveyed. The mental breakdown then comes in the course of life, as a result of a severe or extraordinary stress or strain, be it disease, be it some great emotional crisis, the loss of friends, or grievous domestic relations, business worries, or what not, productive of brain exhaustion. These disturbing factors are credited with causing the insane condition, but not justly so. They play only a minor part, and in a sound mental condition, based on healthy and stabile brain organization, would scarcely have caused a ripple.

Again, the inheritance of mental instability may come from any form of degeneracy in the direct ancestry, such as nervous disorders, mental or nervous inferiority, intemperance, as well as insanity. Some one has said, that to treat insanity efficiently, it would be necessary to begin with the grandfather. This does not mean that the grandfather or other ancestors was necessarily insane, he may have been epileptic, a dipsomaniac, or perhaps only queer. There was, however, constitutional weakness or bias of the central nervous system, which is transmitted, and in our patient, under influences lowering the natural resilience and recuperative powers of the cortical cells and fibres, culminated in disaster. Various

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statistics give different percentages of the inheritable factor in insanity. I am convinced that all figures you may see are much too low, owing to faulty data on which the statistics are based. Instead of 30 or 40 per cent, double these numbers is undoubtedly nearer the truth.

Studies in heredity have of late years inclined me to the views of Weissmann, as to the continuity and persistence of the germ-plasm, while still convinced that variation and natural selection are fundamental factors, and the former operates freely in nature, according to Mendelian laws.

A critical examination into the history of the notorious Jukes family, and the equally illustrious Edwards family, and more recently, that of the two branches of the Kallikak family, with which you are all familiar, go far to convince the unprejudiced student of the fundamental influence of heredity in our race, and more especially to corroborate the views of Weissmann. If they be altogether true, it means, that by favorable influence in the environment, you may improve the individual, but you cannot improve the stock. The germ-plasm is continuous and unaltered by transitory influences, and bears from parent to offspring, from generation to generation, whatever of good or evil, of efficiencies or weaknesses, of abilities, traits or qualities there may be characteristic of the tribal constitution. However, mutation, or large variation may step in, and bring forth a new deal. But as a rule, the variation depends on unknown factors which escape our ken and shuffling.

In this connection, it may be well to draw attention to the fact, that a constitutional characteristic such as a morbid trend, for instance, degeneracy, or to be more specific, insanity, may be started *de novo*, by prenatal influences, be they inaugurated before or after conception. Most pernicious and malignant are the racial poisons.

But besides these unknown or rather unrecognized disorders or disturbances in the mother during gestation, may have lasting nutritional influence on the fetus, which may endure after birth and throughout life.

My own observations, corroborated by the more extensive research of others, have led me to the conclusion that insanity, or rather, the constitutional predisposition to insanity, is inherited in accordance with Mendel's law. Furthermore that the insane diathesis is recessive and normality is dominant. It means that the constitutional neuronie weakness predisposing to insanity, or some other form of open expression of degeneracy, is depending upon the absence of a positive something, a so-called determiner, essential to normal growth and expansion and consequent functional integrity of the cerebral cortex. It is indeed fortunate that it is as it is. Were the reverse true and the morbid abnormal trend dominant, social conditions would be unspeakable and appalling and the proportion of the sane to the insane reversed. What luxuriant fancy

can picture such a condition of things? Especially when it is remembered that insanity always spells deterioration and never improvement in the character of the individual and in his value to the commonwealth.

The practical application of the law of hereditary transmission is important, and means much to us as physicians. Especially is this true when imbued with the altruistic spirit of our profession we serve as high priests at the altar of Humanity and plan and work for the betterment of our race.

Our vague and indefinite notions and impressions have cleared and crystalized into definite knowledge expressible in mathematical terms. We can now prophesy and have our prediction verified by actual count that from the union of a man and a woman, each bearing the constitutional defective strain, on an average and subject only to the law of averages, the children will be as follows: in every four, one will be normal, two will be apparently normal, but be burdened with the defective taint, transmissible to offspring, and one will be actually defective, and under conditions and influences which the other three pass through with impunity become insane or diseased in brain and exhibit some other form of degeneracy such as epilepsy, chorea, feeble-mindedness, criminality or the like.

This enables us to predict the results from a marriage between members of two hereditarily-encumbered families. With a view to practical eugenics, and in behalf of the future, I always advise under these conditions with a most emphatic "Don't."

This brings up the important subjects of consanguineous marriage. It is obvious that cousins or other near relatives of a burdened family should not marry. But if the family is normal and sound there is no objection from an eugenic standpoint to such union.

Law against the marriage of cousins is both right and wrong. It discriminates against a class when only a part of the class should be affected.

Somewhat different are the results of the union of an individual of an affected family with one of sound or normal family constitution. Here the tainted germplasm will be bequeathed from the one side on an average once in two times but meeting and combining with the dominant sound germplasm of the other side, degeneracy does not develop actively in the offspring but remains latent and transmissible to the next generation.

On an average once in two times a sound germplasm combines with sound germplasm and a normal individual results. Briefly, in four children we have all apparently normal, but two out of the four are capable of passing on the constitutional nervous weakness to the offspring; or should they enter into sexual union with others

of a like constitutional predisposition we have again the proposition first considered and the resultant ratio of one actually insane or otherwise defective two capable of transmitting the morbid strain only and one normal individual out of four children.

How will you advise in this second instance? I think here we should be guided by other circumstances and considerations. There may be most excellent traits in the encumbered family well worth preserving. On the other hand there may be very undesirable characteristics in the unencumbered family.

In the present state of society it is not at all probable that we can exercise more than an advisory function since we lack legal power to make our decree mandatory and compelling. But the day will surely come when the state forced by sheer necessity, as a matter of self-preservation, will adopt radical and stringent measures to prevent the spread and continuance of the rancorous growth in the political body. However restrictive and prohibitive laws can only be enacted and honored by the will and good sense of our enlightened people. That means that the people must be more generally and more fully taught, and as I see it, it becomes your duty and mine, unpleasant and unremunerated though it may be, to do this teaching. It is a service to our people we cannot shirk if we would live up to the spirit of our profession and really be what our academic title implies, teachers of medicine.

I am aware that there is a law on the statutes of our State, which seeks to remedy this evil condition by a vasectomy in the male degenerate. But even if consistently enforced within the limitations and restrictions of the law how very partial would be the result! There is no provision made to render innocuous the equally or even more dangerous degenerate female. I say more dangerous advisedly and shall show reasons therefor later on.

Neither does or can the law make provisions against the procreative activity of either the degenerate of mild degree or one in the earlier periods or stages of stock deterioration such as we find in the moron, or those of minor degrees of mental inferiority to say nothing of those scions of tainted families who present no abnormality overtly, but from the Mendelian viewpoint are really heterozygotes and capable of passing on degeneracy to their offspring.

The law requiring a certificate of mental and bodily health as a pre-requisite to marriage means and aims well, and in the right direction but can scarcely be entirely effective for obvious reasons.

You will tell me and I shall be obliged to admit on the force of your argument, in part at least, that marriage is often, if not as a rule, a matter of contiguity and opportunity and that people rarely have a conscious regard as to future consequences when they mate.

Again, the legal union might be denied to those who are or have been actively insane, or epileptic or feeble-minded. But even if we were consulted, and had authority to enforce our decision, we could scarcely reach those with transmissible constitutional taint only even if we knew of it. Besides, from the various intermarriages of families the pedigree in any given case would be exceedingly ramified and certain knowledge obtained with the utmost difficulty. Then furthermore, as a most weighty objection, you will adduce that the very people who should be affected by prohibitive enactments would be the most likely to disregard them in spite of all and uninfluenced by any moral consideration would cohabit and reproduce freely and that illegitimacy would thus be materially increased. All true in a great measure. The more the subject is searched, the more numerous and deeply rooted do the difficulties in the way of betterment appear.

But we should not despair and abandon ourselves to pessimism. In our exploration of these dark and labyrinthian recesses and deviations in our human family, we also encounter more hopeful tendencies. While in our reckless way of doing things we have done much to extend and perpetuate degeneracy in our race and scarcely anything to restrict or erase it, the seed of its ultimate relief lies deep within its essence. The process of degeneration contains its own cure. The degenerate branch on the tree of life is doomed to extinction.

The process of degeneracy is cumulative, and according to the observations of Morel made long ago, the sequence is as follows:

First generation: moral deterioration, alcoholic excess.

Second generation: inebriacy, maniacal attacks, paralysis.

Third generation: hypochondria, melancholia, disgust of life, homicidal tendencies.

Fourth generation: imbecility, idiocy; extinction of the family. (The idiot is sterile, and incapable of procreation.)

There is, besides, an unmistakable trend in sexual selection favorable to the accentuation of degeneracy looking towards ultimate erasure of the defective family. I have observed and you may, if you will look closely, a distinct tendency of the defective to mate with the defective. (In our investigation we must bear in mind that insanity, epilepsy, feeble-mindedness, constitutional weakness, inferiority, in fact all aberrancy from the normal in the nervous system are interchangeable and simply outward expression of a degenerate stock.)

I have been early struck with the frequency with which I found in victims of indubitable hereditary transmission not one, but both parents, defective in some phase. You would be as astonished as I have been, to find members of the same families whose representative you meet at a hospital for the insane, at the School for Feeble-minded, at the Industrial Schools and the reformatories or the vari-

ous county homes. And if you go and investigate in the home neighborhood of these various defective representatives you will find in the parents, the alcoholic mated with the feeble-minded, or the incompetent, the failures in life or the concededly neurotic.

Of course there are many exceptions to this rule but even in those cases where one parent is apparently normal, closer investigation usually reveals a blot in the family escutcheon and the appearingly normal individual is, in Mendelian terminology, really a heterozygote.

Were it not for the altogether too numerous introductions of healthy blood into encumbered families the race would clarify itself, and we soon would have less of degeneracy.

But besides this we have certain influences in our midst, which either emphasize and bring out the degenerate strain in the individual or what is still more important, start the degenerative process anew in sound stock.

Far beyond all other evil factors is the potent malignancy of the racial poisons, more especially alcohol and syphilis.

As to the evil results of alcohol, particularly on the offspring, permit me to quote the experience of others in order that you may not deem my observations and deductions singular.

DeFursac, a prominent French authority in mental disorders, says: "Chronic alcoholism is encountered with particular frequency in the parents of psychopaths and neuropaths; it produces all possible forms of degeneration, but creates more particularly a special morbid disposition, which Joffroy has termed, the convulsive tendency. Many children of alcoholic parents die of convulsions at an early age, and of those who survive, more than fifty per cent become epileptics."

The foremost living authority in Psychiatry, Dr. Kraepelin, after describing the deteriorating influence of alcohol on the various organs and tissues of the body, continues:

"This general involvement by disease, becomes especially fateful through the fact, that it is apparently capable of exerting the most pernicious influence on posterity. Dr. Demme for the purpose of illuminating this point more closely, has examined in the course of twenty years, the children of two groups of ten families each. In one of these groups, the parents were addicted to the use of alcohol habitually; in the other group the parents were sober. Out of the alcoholic group, issued 57 children, and of these 10, or 17.5 per cent were normal. The other children of this group were afflicted with various ailments pointing to degeneration, such as malformations, dwarfism, chorea, epilepsy and idiocy. Twenty-five of these children perished within the first few months of life.

Out of the group of sober families were born 61 children. Of these only five died and four later on suffered nervous diseases, and two were defective in development. The remaining 50 child-

ren, or 81.9 per cent were and remained perfectly sound. These experiences show in the most striking manner that chronic alcoholic poisoning not only destroys the individual, but also in the embryo stamps the seal of degeneration on the coming generation." I personally have been able to elicit a history of alcoholism in the direct ancestry of the majority of epileptics coming under my care.

Darwin has observed that the drunkard's family becomes extinct in the fourth generation, thus conforming to Morel's law. Now someone will object and say: "Alcoholism is only one phase or active expression of degeneracy, like epilepsy or imbecility." Very true; but that it also may and does become a productive cause of degeneration, has been shown experimentally by work reported recently by Charles B. Davenport, director of the Carnegie Station for Experimental Evolution, at Washington, D. C., which reads as follows:

The Influence of Alcohol on The Unborn.

"It has been known for some time, that eggs of fish do not develop normally when alcohol is added to the water; and it has been suspected that the frequent association of alcoholism in the father and epilepsy and feeble-mindedness in the children, was a causal one. This subject has been studied experimentally on guinea pigs by Dr. Charles R. Stockard, of New York, who has made some of them breathe fumes of alcohol for an hour a day. The stock that had not breathed produced only healthy young that developed normally. But when guinea pigs that had long been intoxicated by alcohol were used as fathers, with normal mothers, eight out of twenty offspring were stillborn, seven died soon after birth, and of the five that survived, only one grew at the normal rate. When the mothers only were intoxicated, the results was not quite so bad; and when both parents were alcoholics most young aborted, many were stillborn, and not one survived infancy.

"The worst fate befell the progeny of two drunken guinea pigs, the next worst the progeny of a drunken father; those of a drunken mother were less affected, but were terribly weakened. Since the human child develops in the same relation to the mother as the young guinea pig does, the danger to the children of alcoholics is evident."

The second great racial poison is syphilis. * In this assembly there is no need for me to say anything about the malign influences of this abomination on the offspring of its unhappy host. Its every expression in living tissue spells deterioration. Its power for evil is no less marked in its immediate victim.

Besides luetic insanity, we have paresis, a progressive disease of the central nervous system, closely related to tabes dorsalis, which chiefly affects the brain worker, when he should be in the zenith of achievement. We have long ago recognized the close con-

nection between paresis and an ancient syphilitic infection. Of late years, in extensive trials by Wassermann test, the reaction in paretics were almost without exception positive. Now quite recently comes a report from the Rockefeller Institute, to the effect that Noguchi has demonstrated the presence of *spirochaeta pallida* in the brain rind of a very large number of paretics. We are therefore justified to speak of paresis, no longer as para or meta syphilitic, but as truly a brain syphilis. Paresis is a disease of the city, it is markedly increasing, and with us involves rather more than 10 per cent of the men admitted to the hospital.

You ask; "What will you do to abolish, or failing in this, to reduce this evil to a minimum?" Would that I had an adequate answer to this as well as to that other question: "What can you do to prevent alcoholism?" We are still so far from that golden time when human nature shall have become perfected, and human knowledge so vastly extended, that there is no more disease, and no more tears shed in pain and bitterness of spirit.

But a few legitimate deductions from our observations may point the way, on which we must plod and labor towards this goal.

Syphilis, and other venereal disease, finds its seminary in the social evil. Various attempts to remove prostitution from the social body are concededly more or less of a failure. Restrictive and prohibitive legislation is plainly inadequate. Why the difficulty in the solution of the problem? The answer is this: The roots of the trouble lie deeper. Law can regulate but not create. It cannot get a grasp on the people involved for there is nothing to grasp. They lack that on which obedience to law depends in the normal individual, the sense of responsibility.

The ethical sense is a late acquirement in the race and in the individual and these people, both the purchasable woman, and the man who panders to her are incapable of attaining it and are thus deficient.

In substantiation of my argument, I would ask you to study carefully the genealogical tree of any degenerate family, such as most of the Jukes or the bad branch of the Kallikak family. You will be struck by the great number of prostitutes, habitually immoral and be it not overlooked, inveterate drunkards scattered promiscuously throughout the other branches labeled with various defects.

Or study the people of this class in your neighborhood. If not actually moral imbeciles, they are at best morons.

The question resolves itself then again into that of the eradication of degeneracy. What can we do?

Place venereal disease under suitable quarantine.

Prevent the reproduction, by the knife if need be, of the actually insane, feeble-minded, criminal and otherwise defective, on a constitutional basis of both sexes; and then by a widely-extended

educational propaganda prepare our people, especially the young, the citizens of the days to be for the coming of that day when there shall be kept here under the gilded dome on Capitoline Hill, an official human stock book, and when no one will be willing or be permitted to mate with one whose escutcheon in this Book of Fate bears the bar sinister.

What, have human beings bred like Herefords or Durhams? Yes. Why not? Is that day far off? Perhaps.

CLINICAL SIGNIFICANCE OF REFLEXES*

TOM BENTLEY THROCKMORTON, B.Sc., M.D.

Des Moines.

As aids to diagnosis in determining various nervous and sometimes mental disorders, the clinical findings as manifested by the reflexes are of the utmost importance. The percussion hammer is to the neurologist of to-day as was calomel to the old-time practitioner—one and inseparable—for by constant study and observation, neurologists have found that in the various disorders of the nervous system the reflexes are the best indices at their command by which to gauge the nature and extent of abnormal change in nervous structure. It must not be misconstrued to mean that the reflexes are constant criteria and are always to be found the same in seemingly similar conditions, for such is not the case, but there are cases in which some changes in reflex activity are fairly constant factors and when so found to be present are considered to be almost pathognomonic of certain disorders. A positive diagnosis of a nervous disorder cannot justly be made on the presence or absence of a single reflex, but when several reflexes are changed from the normal, these changes together with other findings are of the utmost value in attempting to solve the nervous lesion.

The field of neurology is indeed a broad one, and the intricacies of the nervous mechanism cannot be mastered in a day, but the fundamental principles of neurologic examination as manifested by various reflex activities can with a little study be well enough understood to enable one unskilled in such work to get a fairly good working idea of the stability of the nervous system. It is with this object in view that I shall endeavor to present in as brief a manner as possible, the reflexes mostly used in the examination of the nervous system, the method of their elicitation, and their value as means of diagnosis.

Before presenting the various reflexes for your consideration, I wish to briefly call attention to the anatomophysiologic mechanism of a reflex arc, for a proper knowledge of its constituents is essential

*Read before the Polk County Medical Society, 1912.

for the understanding of reflex action. The act in its simplest form consists of the following phenomenon: an impulse following a peripheral excitation is transmitted over sensory fibres through the corresponding posterior spinal root into the spinal cord, where by means of an intercommunicating fiber, it reaches the cell in the anterior horn of the cord. From these cornual cells in efferent impulse is sent over motor axons (spinomuscular neuron) which produces a contraction of the muscle fibers in which those axons terminate. The action of this lower segment is governed by the cortical cells in the motor area of the brain through the corticospinal neurons, which terminate about the gray matter in the anterior horns of the cord. Lesions involving either the sensory or motor elements of the reflex are produce a diminution or abolition of the reflex act, whereas if the corticospinal element is interfered with, its governing action is inhibited and the reflex act is increased or exaggerated. Some reflexes occur unconsciously, as pupillary and vasomotor phenomena, peristalsis, etc., or the element of consciousness may be added when the afferent impulse, besides exciting a reflex motor action, sends part of its impulse upward through the cord to the general sensation area in the opposite cortex. One of the chief characteristics of a reflex lies in an automatic execution of a movement, irrespective of the individual's will. Thus it will be seen that motor and sensory fibers, ganglia and nerve cells are brought into a harmonious relationship, one with another, independent of will power, in producing the simple act of reflex action. For clinical purposes three varieties of reflex action are ordinarily considered, namely, visceral reflexes, superficial or skin reflexes and deep or tendon reflexes.

The visceral reflexes are not of any great moment since they have to do largely with the functions performed by the various organs whose musculature is incapable of direct voluntary restraint, inasmuch as it is under the control of the sympathetic system. The rectal, anal, vesical, scrotal, uterine and ciliospinal reflexes all come under this grouping, but the latter is perhaps the one most often used in examinations. It is elicited by pinching or scratching the skin of the neck, which causes dilatation of the corresponding pupil and merely indicates that the cervical sympathetic branch is intact. Injury to this branch is usually followed on the affected side by myosis, pseudoptosis, endophthalmos, and of course loss of the reflex itself.

The pupillary reflexes, while not considered as belonging to this group, since they occupy somewhat of a special category of their own, are perhaps in some respects rather analogous to a deep reflex. However, they will be considered at this time. Normally, when a good light is thrown directly on the previously shaded irides, they contract rather briskly and equally, producing the ordinary

pupillary reflex, and any departure from this should be considered as abnormal. If one eye is shaded by a card or observer's hand and the other eye exposed to the light, the iris of the shaded eye should act in unison with its fellow, producing the consensual reflex. Not infrequently the disturbance of this reflex is one of the early signs of paresis. Total loss of reflex action to light without disturbance of the power of accommodation and convergence (reflex iridoplegia) produces the Argyll Robertson pupil, which is largely considered as pathognomonic of cerebrospinal syphilis, and those parasymphilitic affections, *tabes dorsalis* and paresis. Early in some cases of paresis, the pupils are unequal and irregular in outline, the irregularity shifting from time to time, and Dercum¹ holds that this latter condition when present should be considered but a forerunner of the Argyll Robertson phenomenon. The converse of this phenomenon is found in conditions where the pupil reacts to light but not to accommodation and convergence (cycloplegia) and this condition is sometimes one of the sequelæ following diphtheritic infections. Other evidences of a postdiphtheritic neuritis, as paralysis of the external ocular muscles, or of the palate, lost knee-jerks, etc., however, will help to make the diagnosis plain. Total loss of reflex action to light, accommodation and convergence (total iridoplegia) may sometimes also be found and when present usually points, as does also the loss of reaction to accommodation and convergence, to some nuclear degeneration of the motor oculi nerve.

The Wernicke pupillary inaction sign as a means of diagnosis in homonymous lateral hemianopsia between lesions anterior and posterior to the primary optical centers is mentioned only in passing, inasmuch as the test is too delicate for practical purposes and its results are reliable only in the hands of a skilled ophthalmologist.

The superficial reflexes are also known as skin or cutaneous reflexes, and are movements obtained by slight stimulation of certain areas of the skin or mucous membrane. In certain animals, as the horse, a skin reflex can be elicited by irritating almost any portion of the hide, especially the trunk, but in man the skin is less mobile and hence it is only by irritating certain areas that these reflexes can usually be obtained. In attempting to elicit a skin reflex the stimulus must never be too strong as it may produce a reflex so active in character as to involve nearly all the voluntary muscles of the body and hence the object sought, i. e., the presence or absence of cutaneous reaction.

Any change from the normal in the conjunctival, pharyngeal and palatal reflexes is of importance in all cases in which hysteria is suspected and the absence or presence of the same should be tested. We know that in this functional nervous disorder, which at times simulates even the grossest of organic lesions, that certain mucous membrane and skin areas are not infrequently anesthetic,

The anesthesia may involve one, two or even all the extremities, sometimes mapping them out in a glove- or stockinglike arrangement, or it may involve the entire half of the body, the anesthetic area abruptly ending at the median line. Certain hysterogenetic zones may also be present as indicated by excessive tenderness or even pain when pressure is made beneath the mammæ and over the ovaries. The cornea may be anesthetic and the conjunctival reflex abolished, as indicated by the failure of the orbicularis oculi to contract when the cornea is touched by a tuft of cotton. The pharynx may be anesthetic and fail to contract when its posterior wall is touched by some foreign object, or the soft palate for a similar reason is not elevated when it is irritated by a probe. The loss of these reflexes alone is not pathognomonic of a hysterical affection, for the corneal reflex is sometimes diminished or abolished on the side corresponding to the paralysis in cases of apoplexy, and the soft palate may be paralyzed following a diphtheritic infection as before mentioned, but their absence when accompanied by other cardinal findings, such as glove- or stockinglike anesthesia, hemianesthesia, hysterogenetic zones, reversal of the color fields, etc., at once makes the diagnosis of hysteria evident.

The epigastric reflex is obtained by stroking the skin downward from the nipple, producing ordinarily a dimpling of the epigastrium on the side stimulated, and signifies that the segmental level of the cord between the seventh and ninth thoracic nerves is intact.

The abdominal reflex is elicited by gently stroking the skin downward from the costal margins which normally produces contraction of the abdominal muscles on the corresponding side. Its segmental level is found between the eleventh thoracic and the first lumbar spinal nerves. It is said that in certain acute abdominal conditions,² notably in acute appendicitis and enteric fever, that this reflex is often absent, and Strümpbell and Müller³ have pointed out that in young adults whose abdominal walls are apparently normal, and in whom no edema or excessive obesity is present, that its absence is strongly suggestive of disseminated sclerosis.

Stroking the inner and upper part of the thigh produces the cremasteric reflex, which is the drawing or pulling up of the testicle on the corresponding side due to the contraction of the cremasteric muscle, and indicates that the segmental level of the cord between the first and second lumbar spinal nerves is intact. In old men this reflex is usually sluggish or apparently absent, but in such cases it can usually be elicited by making sudden firm pressure backward against the sartorius muscle in the region of Hunter's canal, or against the adductor tubercle of the femur. The statement is made that in cases of sciatic neuralgia this reflex is frequently exaggerated on the affected side.

The gluteal reflex is elicited by stroking the skin of the buttock which causes the gluteal muscles to contract; the superficial anal

reflex is obtained by picking or irritating the skin of the perineum, causing the external anal sphincter to contract. The segmental level of these reflexes is found in the fourth and fifth lumbar and in the fifth sacral and coccygeal segments, respectively.

Of all the superficial reflexes the plantar reflex is the one having the greatest practical importance. Ordinarily, when the skin of the plantar surface of the foot is irritated by drawing some foreign object along the sole from behind forward, there is prompt plantar flexion of the toes. Should the stimulation be too strong, contraction of the tensor fasciæ femoris, dorsiflexion of the ankle and even partly voluntary movements may take place, thus obscuring the movement of the toes. For this reason it is necessary to use care when endeavoring to elicit this reflex to apply a stimulus that is just sufficient to produce toe movements, and nothing more. This reflex, which is purely flexor in type, occurs only when the reflex arc is intact and when there is no irritation or interruption of the corticospinal element of the central nervous system. The fact that the governing influence of the upper motor neuron is necessary in order that the reflex be flexor in type, thus making it in one sense a cortical reflex, is now well known, for Babinski some fifteen years ago pointed out to the profession that in lesions, involving the upper motor pathway, especially the pyramidal tracts, plantar stimulation produced extension of the toes, particularly the great toe. In testing for the extensor plantar reflex, the same care in applying stimulation to the sole must be observed as in testing for normal plantar flexion, else the movement of the great toe is somewhat slower than in normal flexion, and sometimes the other toes separate, as it were, assuming a fan-shape appearance—*phénomène d'éventail*. This reflex never occurs in health except in infancy, and is one of the most valuable signs we have in differentiating between the so-called functional and organic lesions of the nervous system.

The Gordon paradoxical flexor reflex has the same clinical significance as Babinski's phenomenon and is elicited by making firm pressure through the calf muscles onto the deep flexors beneath, producing extension of the great toe or of all the toes. This reflex is sometimes found in slight or beginning irritations of the upper motor pathway, and as has been pointed out elsewhere, may occur before a Babinski sign can be demonstrated, later being replaced by Babinski's phenomenon as the irritation increases. Its occurrence with a Babinski is the exception rather than the rule, for there is apparently a species of antagonism between these two reflexes.

Somewhat recently I called attention to a new method⁵ for eliciting the extensor toe reflex by percussion. In those cases in which the Babinski sign was present, I found that percussion at the base of the great toe would produce extension of the member, accompanied sometimes by extension of the remaining digits. The reflex is best obtained in the following manner: the muscles of the

leg should be in a relaxed condition and the toes in a passive state. The skin overlying the upper surface of the first metatarsophalangeal is struck with the pointed end of a percussion hammer just to the inner side of the tendon of the extensor longus hallucis muscle. The force of the blow required will vary in different individuals, some requiring but a few light taps to produce extension of the toe, while others may require several fairly sharp blows before extension occurs. The amount of stimulation necessary to produce extension by my method apparently bears some ratio to the amount of plantar irritation necessary to produce Babinski's sign, for it has been my observation to find that in those cases in which extension to plantar stimulation readily occurred, only slight or moderate percussion force was needed to elicit the same phenomenon. In those cases in which the Babinski sign is only slight or somewhat indeterminate, extension of the toe may not follow the percussion blow, but close observation will usually reveal that the distal portion of the tendon of the extensor longus hallucis muscle stands out in more or less prominence, due to the slight contraction of the muscle. Sometimes extension of the great toe can be produced by striking the skin about the inner aspect of the first metatarsophalangeal joint, or by striking the skin overlying the first phalanx of the toe, but I have obtained the best results when the skin area first designated is percussed. There is no question but that the reflex is pathologic, but owing to the lack of a sufficient number of clinical observation, I am at present unable to state its value as a nervous phenomenon further than to point out its corroborative evidence showing that extensor toe reflexes are pathologic and are largely true skin reflexes in character.

The external malleolar phenomenon, or Chaddock's sign,⁶ is perhaps the most recent contribution to nervous diagnosis along the line of extensor toe reflexes. Chaddock has shown that sometimes in diseased or irritative conditions affecting the upper motor pathway, irritation of the skin just below the external malleolar process produces extension of the great toe or of all the toes with or without "fanning." He also states⁷ that he is convinced of the diagnostic importance of this sign in incipient stages of dementia paralytica (in eighty out of ninety-four cases it was found by him: Babinski only eleven times⁸), and is sure that it will also be found in a certain number of cases of dementia præcox. In a well-systematized report of a series of cases studied by him, Ingram⁹ states that he was fully able to substantiate the claims made by Chaddock, i. e., that the malleolar sign was equal in value to Babinski's sign; that it was a more delicate test, appearing earlier and frequently lasting longer than the Babinski; and that it appeared with the Babinski, whereas the Babinski did not occur without the Chaddock.

The deep reflexes are also known as tendon reflexes, and are movements elicited usually by percussing tendons, thus producing

a contraction of the muscle or group of muscles supplied by the tendon struck. The reaction of a tendon to a percussion stimulus varies from the normal muscular contraction found in health, to an exaggerated condition present when the inhibitory action of the cortical cells in the motor area of the brain is interfered with through disease of the cells themselves or their axis cylinders, or to a diminished or even lost reaction when some part of the reflex arc proper is disrupted. It is generally accepted to-day that while the cutaneous reflexes originate from the cortex, the tendon reflexes are spinal in character, and hence the knowledge of the constituents of the spinal arc enables one to a great degree to trace out the lesion causing increased or diminished tendon reflexes. Increased tendon reaction is sometimes found in normal individuals whose nervous temperament is rather "high strung" or who are on a tension at the time of examination, and it may also be found in hysteria and in neurasthenia. Diminished or absent tendon jerks usually accompany diseased conditions of the gray matter in the anterior horns of the cord (anterior poliomyelitis), or of the motor nerve fibers leading from the cord to the periphery (peripheral neuritis), or of the posterior spinal roots and dorsal columns of the cord (tabes dorsalis).

While it is not within the province of this paper to elaborate on the disputed question as to whether or not the knee-jerk is a true reflex, there is no question but that for all practical purposes it can be taken as an index of the integrity of the reflex arc. This reflex is perhaps the one most often examined in neurologic tests, and the method of its elicitation depends largely on whether the individual undergoing examination is in the sitting posture, or reclining position. In the sitting posture, the usual manner of procedure is to direct that the knees be crossed and the thigh muscles relaxed, and outlining the patellar tendon between the thumb and finger of one hand to strike the tendon a blow sufficient to produce contraction of the quadriceps extensor muscle. If the jerk is diminished, concealed or apparently absent, a greater response can be obtained by the reinforcement method of Jendrassik in which the individual is told to look upward or close the eyes, to clasp one hand with the other, and to pull outwardly at the moment the tendon is struck. This method of procedure will make a feeble jerk more evident, having no effect, however, if the knee-jerk is pathologically absent, although it must not be forgotten that in 1 or 2 percent of normal individuals, the knee-jerk is absent even by the reinforcement method. If in doubt as to the presence of the reflex, it has also been recommended¹⁰ that the palmar surface of the index finger of one hand be placed over the vastus internus, or the palmar surface of the index finger of one hand be placed over the tendon and the dorsal surface of the finger struck with a percussion hammer.¹¹ In this manner the slightest contraction of the muscle or of the patellar

tendon can be felt, whereas the contraction may be so slight as to entirely escape observation. In the reclining position, the usual method of testing for the reflex is to flex the leg moderately on the thigh which is supported by one hand while the patellar tendon is percussed. In endeavoring to elicit this reflex, or any other tendon reflex, care should always be taken to see that the musculature is absolutely relaxed, else a spasm or contraction of the same may retard or even "conceal" the reflex action. Exaggeration of the knee-jerk usually follows degenerative changes in the corticospinal neurons as seen in hemiplegia, spastic paraplegia, transverse myelitis, etc. However, it should be borne in mind that in a complete transverse myelitis or in a total transection of the cord from fracture and dislocation of the vertebræ, there will be abolition of all the deep reflexes below the lesion, but toe reflexes will usually be present which are extensor in type. The loss of the knee-jerk was at one time thought to be almost pathognomonic of tabes dorsalis and was known as Westphal's sign, because this noted neurologist first called attention to its absence in this disease. While it is true that this reflex is diminished or lost in the vast majority of tabetic cases, still it is also similarly affected in other diseases of the nervous system, some of which have already been mentioned, and is also absent in a small percentage of apparently healthy individuals.

The ankle-jerk also possesses great diagnostic significance. This reflex is best elicited by tapping the Achilles tendon while the patient is kneeling on a chair or other suitable object with his feet projecting well over the edge of the same, or if in the reclining position, by grasping the foot above the toes and raising the leg well in the air, which allows free access to the tendon. Having perfect relaxation of the calf muscles, sufficient tension can be made on the tendon by flexing or extending the ankle and by so doing the muscles can be "toned up," so to speak, to that point of greatest efficiency which will readily give contraction when the tendon is struck. In this manner I have sometimes satisfied myself as to the presence of the jerk by feeling the slight extension of the foot against the hand following the percussion of the tendon, whereas by other methods I could not assure myself as to whether the extension of the ankle was due to muscular contraction or to the force of a blow on a tendon which moved the ankle by mechanical means. Again, in some cases in which other findings were indicative of organic changes but in which clonic movements of the foot could not be readily obtained by the ordinary method of eliciting ankle-clonus, I have sometimes been able to produce clonic contractions by percussing the tendon and at the same time varying the tension on it by slightly flexing or extending the foot. In conditions involving the cord low down, as in sacral tabes, changes in the ankle-jerk may be present, whereas there will be preservation of the knee-jerk until the centers higher up are involved.

Organic involvement of the pyramidal tracts is by far the commonest cause of permanent exaggeration of the deep reflexes, and such conditions are not infrequently accompanied by a rhythmic series of muscular contractions produced by passively stretching a tendon, the contractions continuing as long as the tension is maintained on the tendon. I refer now to clonus. The commonest clinical variety of clonus is ankle-clonus, which is elicited by passively flexing the leg moderately on the thigh and then suddenly dorsiflexing the ankle by upward pressure on the sole of the foot. Rapid alternating extension and flexion of the ankle ensues due to rhythmic contractions of the soleus muscle as first pointed out by S. Weir Mitchell. Sometimes a spurious or pseudo-ankle clonus is encountered in cases of hysteria, but the clonic movements are generally poorly sustained and irregular in rhythm and are never accompanied by an extensor toe reflex.

Knee-clonus or patellar clonus has the same significance as ankle-clonus and is elicited by making sudden traction downward on the patella, the knee being passively extended. Any of the deep jerks may become exaggerated into clonus; i. e., clonus of the jaw, elbow, wrist, fingers, knee, ankle, toes, etc. I remember a case of spinal lues in which the degenerative change in the pyramidal tracts was so great that a moderate tap on the patellar tendon would produce a clonus involving the entire lower extremity. Persistent clonus of any part always indicates a pathologic condition.

The biceps and triceps tendon reflexes are the two reflexes of the upper extremities most often investigated. The former is elicited by semiflexing the patient's elbow, supporting the forearm against the examiner's arm and striking the biceps tendon, which produces an upward movement of the forearm. By supporting the patient's arm just above the elbow with one palm, allowing the forearm and hand to hang perfectly limbed, the triceps reflex can be obtained by striking the tendon which produces an extension movement of the forearm.

The supinator jerk is elicited by supporting the patient's hand in a semisupinated position with the elbow semiflexed, and tapping the styloid process of the radius, which causes contraction of the muscle with a resultant flexion of the elbow. Increase in the muscular tonicity of the upper extremities, and hence increased reflex action, is found in involvements of the corticospinal neuron at or above the cervical enlargement of the cord, viz., in monoplegia, hemiplegia, in amyotrophic sclerosis, in which there is not complete degeneration of the motor cells in the anterior horns of the cord, etc. Loss of these jerks is usually symbolic of some change in the spinal arc proper, or in the peripheral nerve fibers.

The various reflex phenomena which I have endeavored to present for your consideration do not by any means encompass all the reflexes known for the examination of the nervous system, but are

rather the ones which are of the most practical value. Aside from extensor toe phenomena, the absence or presence of a single reflex phenomenon does not necessarily warrant the making of a positive diagnosis of a nervous disorder, but rather in arriving at a definite conclusion, the entire clinical picture as manifested by the association of symptoms, physical and clinical findings, supplemented by a complete history should always be the determining factors. For instance, the diagnosis of tabes dorsalis should never be made on the absence of the knee-jerk, unless it is also accompanied by other cardinal symptoms as visceral crises, lightning pains, ataxia, Argyll Robertson pupil, vesical disturbances, etc. Indeed, it has been contended¹² that it is unwise to make a positive diagnosis of either tabes or paresis unless the pupillary findings are positive of these disorders.

Unfortunately from a diagnostic standpoint, we have no constant changes in the reflexes accompanying mental disorders. General paralysis of the insane perhaps affords the most constant changes in reflex activity of any of the forms of insanity, but it must be remembered that in this disorder we are dealing with an organic affection since pathologic changes in nervous tissue can be demonstrated. The tendon reflexes are variable; constant and characteristic. Early there may be disturbance of the consensual reflex; inequality and irregularity denotes the oncoming loss of light reaction. However, the loss to light reaction is also found in tabes and in old syphilis of the central nervous system, which goes to show the necessity of having other clinical evidence besides a single reflex, no matter how pronounced that reflex may be, before making a positive diagnosis of a nervous disorder. As a general statement, I think it may be said that the deep reflexes are usually diminished in those mental disorders which are depressive in character, and increased in excitive and exalted mental states.

Finally, as a means of making a differential diagnosis between organic and the so-called functional disorders, the presence of an extensor toe reflex, of which type the Babinski phenomenon is classical, is conclusive in that such a finding always denotes an organic disease of the nervous system. Persistent ankle-clonus in association with a plus knee-jerk is also a good indication of an organic motor lesion.

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THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

EDITORIAL

To All County Secretaries. 1914 Dues.

As the end of the year approaches, the Secretary of the Iowa State Medical Society desires, through the agency of its Journal, to request that as far as possible, the 1914 dues be collected after the plan in the collection for 1913 dues. That is, where ever possible, collect the dues for 1914 during the month of December, 1913, and send them to the State Secretary, as soon as possible.

To the disappointment of the officary of the Society the special assessment of \$1.00 per member ordered collected with the 1913 dues was found to only temporarily relieve the stringency in the Medico-Legal fund. So the House of Delegates, at the 1913 session, increased the dues to \$4.00 per year. It is the hope of the officers of the Society, that the great amount of litigation in which the members of the Society are involved may become lessened soon, but while there are as many damage suits against the members as there have been for a year or two, it will be necessary to collect \$4.00 per member.

J. W. Osborn.

The 17th International Congress of Medicine, London, 1913.

The 17th International Congress was in every respect a great success. The registration reached not far from 7000, nearly 600 of whom were from the United States. 420 names were registered with the London address. The plan of the organization was similar to the plan adopted by the A. M. A. and the work was said to be much more expeditiously conducted than at previous meetings of the Congress. The opening meeting took place at Albert Hall, Wednesday morning, Aug. 6th H. R. H. Prince Arthur of Connaught opened the Congress in behalf of his majesty, the King. The Congress was called to order under the presidency of Sir Thos. Barlow who delivered a very able and scholarly address. This was followed by an address by Sir. Edward Gray on the part of Great Britain. After this followed short addresses delivered by representatives of different governments.

The rooms for the section work were small and the attendance at the sessions never large. There were in all 23 sections and 3 sub-sections. Section meetings were held both forenoon and afternoon. The general sessions were held on Wednesday, Thursday, Friday, Monday, and Tuesday. Wednesday, "Medicine" by Prof. Chauffard; an address on "Surgery" Thursday by Prof. Harvey Cushing of Harvard University; Friday, an address by Prof. Paul Ehrlich of Frankfort a/M.; and Monday an address by Prof. W.

Vateson; and on Tuesday an address by the Honorable John Burns, M. D. The address delivered by Prof. Cushing was received with great favor by a large and appreciative audience. Sir Thos. Barlow who presided, took occasion to speak in the most complimentary terms of Prof. Cushing's address and of the good it would do England in advancing scientific work in medical and surgical lines. The section meetings were with few exceptions, held at South Kensington in halls belonging to the University, and were about a five minutes walk from the South Kensington station.

The social features of the Congress took a wide range. In a few instances general invitations were extended and in other instances application was made and invitations issued up to a certain limit, as for instance a visit to Dorchester House in Park Lane limited to 50, and the Royal College of Surgeons to 2000. In other instances only private invitations were extended. There were excursions to interesting points such as to Stratford, Cambridge, Oxford, etc. Tickets for these excursions were issued at considerably reduced prices. One of the most expensive receptions was the one given by the Grocers Company at Grocer's Hall, and limited to 500, and the same night the dinner given by the Society of Apothecaries, by invitation. One of the interesting features of the general receptions was the reception given by Lord Strathcona at the Royal Botanic Gardens, Regents Park. Lord Strathcona who had reached the advanced age of 92 years, stood in the park and shook hands with several thousand people who took this opportunity to visit the Botanic Gardens. This plan of dividing the receptions into general ones and limited ones and private invitations, saved in all instances any serious crowding, and all the embarrassment incident to many persons getting together at the same place.

On Sunday, Aug. 10th, divine services were held at St. Paul's Cathedral, Westminster Abbey and Westminster Cathedral. Special seats were reserved for members of the Congress, and sermons were preached commending the great work done by the medical profession and the great advantages the Medical Congress and similar gatherings were to the general public in bringing about better conditions of living.

The American members of the Congress were deeply impressed by the general spirit of the press. A large part of the daily editions of several papers were devoted to the proceedings of the meeting, and one, two, three, and sometimes more of the pages of the London Times was entirely given up to the consideration of questions before the Congress. The London Times alone put six of its best men on the work of the Congress. This seemed in strange contrast to the brief notice that the American papers give to great gatherings of scientific men. The English papers very thoroughly discussed the real scientific problems before the Congress, and in this way would serve the public very helpfully in bringing their

attention to the most vital questions. American papers seem to give their space chiefly to the sensational side. If a man reads a scientific paper that can be so interpreted as to appear that he has discovered some great cure for some disease, the papers herald this as one of the great products of the gathering, when as a matter of fact the author of the paper did not intend to convey such an impression. The English press note the true scientific side and draw attention to the difficulties lying in the way of working out the problems that sometimes seem to be beyond the reach of the human mind to determine. Our own papers seem to feel that the sensational side of a scientific meeting would be more likely to appeal to the readers than the scientific side, and that it is less a matter of information for the public than to make an article readable so as to make a better market for the paper itself. We cannot avoid a feeling of humiliation sometimes, that our great papers fail to discover the great function of informing and enlightening the people, and leave it to the papers of foreign countries to lay the matter justly before the general public.

The Workmen's Compensation Act of Washington in Relation to the Medical Profession.

"The Workmen's Compensation Act was passed by the Washington Legislature in its session of 1911. Its administration is placed in the hands of the Industrial Insurance Commission of three members appointed by the governor. The industries of the state are divided into forty-seven classes, rated according to their degrees of hazard. Each industry pays assessments into the fund of its own class and from this fund awards are made only to workmen coming under its class. When a workman is injured, his compensation at the hands of the commission begins at once, continuing over a liberally specified period. In case of permanent injury he receives a certain life pension. In case of his death provision is made for his wife as long as she remains a widow and for the children until they become of age. When the employer makes the required payment into the fund he is thereby exempt from further responsibility for the injured. The compensation paid the injured workman is judgment proof for any liability or indebtedness, so that both the employer and the employee are made secure as to their respective liabilities.

When a physician is called to attend an injured workman he must prepare a statement of the injured man's condition, and from time to time must fill out blanks reporting progress. For these he receives no compensation, as the commission states this is a duty to the state for the privilege of being a licensed practitioner. No provision is made for payment for his services, this being left to an agreement between him and the patient. If the latter has suffered a severe injury, requiring a prolonged hospital treatment, all of his

compensation is usually consumed in paying hospital fees. In many cases his award has not been sufficient even for this. The result has been that the physician in many cases has received nothing for his services. At the recent session of the legislature there was much agitation for the passage of a first-aid act with compensation based on a minimum fee bill, in which was to be included provision for hospital dues. As prepared, the measure met the unanimous hostility of the medical profession, who felt they were better off in their present uncertain state of compensation than with the meager fixed fees proposed. Since the first aid was to become an additional burden exclusively on the employers, it received equal opposition on their part. At length it was decided that the wisest course was to leave the whole subject to a commission for a further study during the next two years, when an adequate measure might be presented to the next session of the legislature."

In relation to the above, it will not apply to transportation companies except street car and interurban companies doing business wholly within the state. All classes of employes including shop men, section men, etc. working for transportation companies which have lines extending beyond the borders of the state, come under the Federal laws and will not come under the Employer's Liability Act until such acts are passed by the general government.

First Aid Work Canadian Pacific Railway Company.

The Canadian Pacific Railway has inaugurated a system of instruction in first-aid work, and a fully equipped car with instructors left Ottawa, January 17th. A complete course of instruction will be given to the men employed by the company, and they will be required to pass an examination in anatomy and physiology. In order to create an added interest in the work, competitions will be held at the different points. We are informed that two thousand men have already qualified in this branch of ambulance work.

Darmouth College Abandons its Medical Course.

It is reported that after the graduation in 1914 of the present junior class of the medical department of Darmouth College, Hanover, N. H., the college will cease to grant the degree of M. D. According to present plans, the first two years of the course in medicine will be given in a department which leads to the degree of B. S., and it is intended that those who do this work successfully will be able to enter upon third year work in medicine in any medical college. It is said that this action on the part of the trustees was rendered necessary by the lack of clinical material, due probably to the isolated position of the college. The Darmouth Medical School was established in 1798, the fourth in the United States. The one hundred and seventeenth graduation exercises were held on April 25th, ten degrees being conferred.

Scale of Fees under the new Insurance Law in England.

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| Visit to patient at patient's house or attendance on patients at doctor's consulting rooms. | 62 cents |
| Special visit, in response to messages left between 10 A. M. and 8 P. M. | 87 cents |
| Night visit, in response to calls received between 8 P. M. and 10 A. M. | \$1.25 |
| Surgical operations requiring general anesthetic or case of abortion or miscarriage. | \$5.10 |
| Administration of general anesthetic. | \$5.10 |
| Setting of Fractures— | |
| Femur | \$5.10 |
| All other fractures. | 2.50 |
| Subsequent attendance at visit rates. | |
| Reduction of Dislocations— | |
| Hip | \$5.10 |
| Others | \$2.50 |
| Subsequent attendance at visit rates. | |
| Midwifery Fees. Minimum fee, | \$5.00 |
| Hypodermic injections or vaccinations. | 12 cents |

Doctor Arthur L. Wright, In Memoriam.

On July 19, 1913, in Paris, France, there passed away in the fullness of his mental and physical vigor, a fearless and loveable, honest and genial man, a former president of this society a long time and loyal worker as a member a sincere and valued friend of every one of us, Arthur L. Wright of Carroll, Iowa. As president of this society, as a member, as a physician, and as a man, Dr. Wright always stood for the best, he never failed to measure up to the highest ideas, he was always on the side of honest, clean and courteous manhood. In his death each one of us has suffered a personal loss, we are saddened by his absence, but our sorrow is tempered by the thought it is good to have known him and that he was one of us. His life will long be an inspiration for those who are toiling for the better things. To his bereaved wife and son, we extend our most heartfelt sympathy in this, their great affliction.

Resolved that these our sentiments be spread upon our records, printed in our official journal, sent for publication to the Journal of the Iowa State Medical Society, and to his bereaved family.

Signed—

L. W. LITTIG,
A. R. MITCHELL.

BOOK REVIEWS.

The Modern Treatment of Nervous and Mental Diseases. By American and British Authors. Edited by William A. White, M. D. Superintendent of the Government Hospital for Insane, Washington, D. C., Professor of Nervous and Mental Diseases in the Georgetown University, Lecturer on Mental Diseases in the U. S. Army and U. S. Navy Medical School, Washington, D. C., and Smith Ely Jelliffe, A. M., M. D., Ph. D., Adjunct Professor of the Mind and Nervous Diseases in the Post-Graduate Medical School and Hospital, New York City, N. Y. Volume II. Illustrated. Lea & Febiger, Philadelphia and New York. Price per Volume \$6.00.

The first volume of this work was reviewed in the June number of this journal. The second volume has come to hand and deals more directly with medical subjects. The first volume considered many matters of great interest to the student of scientific sociology as well as to the physician. Volume II comes directly to the physician with a presentation of the diseases of the nervous system and their treatment. One of the things that impresses the reviewer is the absence of speculations more or less interesting no doubt to the nerve specialist, but very trying to the general practitioner for whom apparently these volumes were intended. The anatomical and physiological considerations and the etiological factors involved are presented in the most concise and direct manner. The first five chapters are devoted to so-called functional nervous disorders with plain indications as to treatment; one chapter to the treatment of spasmodic disorders, one chapter to the treatment of the epilepsies and one chapter to the treatment of meningitides. Two chapters are devoted to a somewhat exhaustive consideration of syphilitic diseases of the nervous system, and the remainder of the volume, or about 300 pages, to organic diseases of the nervous system. We are of the opinion that these volumes are of very great value to the general practitioner of medicine, and the specialist will find much to interest him.

Marriage and Genetics by Charles A. L. Reed, M. D., F. C. S. Fellow of the College of Surgeons of America; Member and former President of the American Medical Association; Professor in the University of Cincinnati. 183 pages. The Galton Press, Publishers; Cincinnati, Ohio.

This small volume from the pen of Dr. Reed of Cincinnati, presents in a versatile, concise, yet comprehensive manner the enormous amount of important knowledge that has accumulated during the past few years in regard to the factors that control the origin of life, shape the course of existence, and determine the characters that are transmitted from generation to generation through the influence of heredity. Such rather complicated subjects as Galton's and Mendel's Laws of Heredity are made clear and such authorities on the question as Darwin, Weissman and Davenport, are frequently referred to. It is a book written primarily for physicians—that they may the better comprehend the responsibility which has been placed on physicians in connection with the solving of social problems in the light of recently acquired knowledge.

The work consists of thirteen chapters dealing with such subjects as Life, Sexual Efficiency, Heredity, Mental Selection, Social Diseases, and the Eugenic Medical Examination. The last named chapter is especially important in as much as physicians are being more and more consulted, as they should always be, by those who are about to get married, to see whether or not there is any reason why the marriage relation should not be established. Indeed, certain ministers will not perform a marriage ceremony unless the contracting parties have a certificate of health from a physician.

The book contains recently acquired and systematized information which every physician ought to have. It may also be recommended to intelligent layman.

H. A.

Diet in Health and Disease. The New (4th) Edition. By Julius Friedenwald, M. D., Professor of Gastro-Enterology in the College of Physicians and Surgeons, Baltimore; and John Ruhrah, M. D., Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Fourth edition, thoroughly revised and enlarged. Octavo of 857 pages. 1913. Cloth, \$4.00, Half Morocco, \$5.50 net. W. B. Saunders Company, Philadelphia, London.

A former edition of this work has proven very helpful to us in arraying dietary formula and we welcome this fourth edition. Changing ideas in reference to diet has necessitated a thorough rewriting of some sections. Many new and valuable tables are included. Sections on self-metabolism, diet in diabetes and gout have been entirely rewritten.

Every practitioner should have for ready reference a work of this character, and we know of no better one than this work by Dr. Friedenwald.

Much assistance will be found herein when outlining dietary requirements for tuberculosis, rheumatic conditions, typhoid fevers, etc.

The nurse will find many, many valuable hints here, in the preparation of nutritious and appetizing dishes for the invalid.

The Surgical Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. August 1913 number. Published Bi-Monthly by W. B. Saunders Co. Philadelphia and London. Price Cloth \$8.00, Morocco \$12.00.

Number 4, Vol. 2, of this valuable work contains 210 pages. The first 40 pages are devoted to vaccine and serum therapy by members of Dr. Murphy's staff, with a concluding chapter by Dr. Murphy on the surgical application of the only method, according to the author's belief, that is of any value in meeting surgical complications. We feel sure that this brief and to the point discussion of vaccine and serum therapy will be appreciated by the readers of these celebrated clinics.

A valuable contribution accompanied by a series of skiagrams showing the blood supply in and around many important joints by Dr. George W. Hochrein will serve as a valuable guide in considering the cutting of flaps in operations about the joints.

A great variety of subjects of more than usual interest are considered in this manner, and we have no hesitation in saying that it is probably the best or among the best of the entire series.

Eye Ear, Nose and Throat. Vol. III of the Practical Medicine Series for 1913. Edited by Drs. Casey Wood. Albert H. Andrews and Gustavous P. Head, of Chicago. \$1.50 or \$10.00 for the ten volumes issued during the year. Year Book Publishers, 327 S. La. Salle St. Chicago.

This volume contains a review of the important literature relative to the eye, ear, nose and throat which has appeared during 1912. The books are primarily intended for the use of the general practitioner, to enable him to readily keep abreast of the progress of the many branches of medical practice. As such, they serve their purpose admirably. To the physician doing special work, they are valuable, as they present in condensed form the current writings. Dr. Wood writes at length on the place of the optician, optometrist and ophthalmologist. This chapter will bear careful reading and thoughtful study.

Diseases of the Eye. A hand book of Ophthalmology, for students and practitioners by G. E. De Schweinitz.. 7th edition.. W. B. Saunders Co. 1913.

This book is more for the use of the general practitioner who must treat some diseases of the eye rather than for the medical student.

It is of especial use to the practitioner because of the careful attention paid to therapy and because atypical conditions are thoroughly discussed.

The part of the work dealing with operations is most excellent; this part is of especial interest to those confining their work to ophthalmology.

The book should be in the library of every one limiting themselves to ophthalmological practice.

Hygiene and Sanitation. A text book for nurses, by Dr. Geo. M. Price, Director of Investigation of New York State Factory Commission. Published by Lea and Febiger, Philadelphia and New York. 1913.

This book is an attempt to give the nurse an elementary knowledge of hygiene. The nurse's duties give her an enviable position in the work of preventive medicine and it is important that she be well grounded in the rudiments of sanitary science.

The division of the text into the following chapters serves this purpose well. The hygiene of habitations; of foods and food supply; of schools and school children, of occupations; of municipalities; personal hygiene.

A book every nurse should read.

A text book of biology for students in medical, technical and general courses, by William Martin Smallwood, Ph. D., (Harvard). Professor of comparative anatomy in the liberal arts college of Syracuse University 243 engravings and 13 plates in colors and monochrome. Lea and Febiger, 1913. Philadelphia and New York.

The beginning chapters of this book take the reader through a consideration of the organism as a whole, the structure and function of organs, the structure and properties of tissues, and the parts of the cell and their work.

Chapters 12 and 13 give the medical man a true conception of the animal kingdom as a whole. Chapter 17 on variation and heredity, and Chapter 17 on animal behavior and its relation to mind, we have found very interesting. We are quite sure all students in medical literature will enjoy reading this volume.

The Elements of Bacteriological Technique, Second edition, Rewritten and Enlarged. By J. W. H. Eyre, M. D., Director of the Bacteriological Department of Guy's Hospital London. Second Edition, rewritten and enlarged. Octavo of 518 pages, with 219 illustrations. Cloth, \$3.00 net. W. B. Saunders Company. 1913. Philadelphia, London.

This is a most complete and comprehensive laboratory manual; so well written, arranged and illustrated as to be worthy of a place on the table of every laboratory worker and to a place in the reference library of every physician who desires to know the essentials of bacteriological procedure.

A Manual of Otology by Gorham Bacon, M. D., Professor of otology in College of P. & S., Columbia University, New York. 6th Edition, revised and enlarged. 164 illustrations and 12 plates, Lea & Febiger, Philadelphia and New York. 1913.

This manual has long been a great favorite with otologists. Due at-

tention in this edition is given to modern methods of tonsillectomy, vaccine therapy, and the bacteriology of cerebro spinal fluid in leptomenigitis.

A valuable treatise on diseases of the ear. A book that you should read.

Obituary.

Dr. Albert Richmond died in Claremont, Calif., March 10, 1913. Dr. Richmond was a graduate of the medical department of the University of Vermont, class of 1869. After graduation he moved to Ames, Iowa, where he practiced for three years, until he was called to Rochester, Vt., by the failing health of his father. After the death of his father he returned to Iowa and practiced in Algona and Ames until his own failing health made it necessary for him to give up active work. It was at this time that he went to California to be near his twin brother, who was also a physician.—Vermont Medical Journal.

SOCIETY NEWS AND NOTES.

Medical Meeting.

Meeting of the members of the Medical Profession of Keokuk county at the Court House in Sigourney, Iowa, at 1 p. m., October 29, 1913.

Program.

"Focal Infections as a factor in Appendicitis and Rheumatic Conditions"—Dr. M. F. Moore, Martinsburg.

"President's Address,"—Dr. C. B. Taylor, What Cheer.

"Vaccine Therapy"—Dr. R. V. Henry, Hedrick.

"The Doctor's Compensation,"—Dr. Wm. Pfannebecker, Sigourney.

The meeting was well attended despite the gloomy day. Drs. M. F. Moore of Martinsburg; L. B. Oliver, Wm. Pfannecker, Margaret Sherlock, J. A. Dulin, T. G. Dulin, W. W. Eastburn, and A. P. Johnson of Sigourney; C. A. Boice of Washington; W. L. Alcorn of Ainsworth; E. W. Gardner of Webster; Fred Lawson, Wm. McLaughlin, R. V. Henry and A. J. Porter of Hedrick; M. Machin of Gibson; T. C. Tillmans of Harper; and C. B. Taylor and wife of What Cheer were registered. Following the reading of the papers,—all of which were fully discussed, officers for 1914 were elected. Dr. M. F. Moore, president; W. W. Eastburn, vice-president; L. B. Oliver, treasurer; J. A. Dulin, secretary; R. V. Henry, F. F. Piercy and Wm. Pfannebecker, censors; C. B. Taylor, delegate; E. W. Gardner, alternate.

A committee, Drs. J. A. Dulin and W. W. Eastburn, was appointed to confer with a like committee of the Washington County Society as to the advisability of three or four union meetings per year.

Drs. M. Machin and Kate Machin of Gibson and Fred Lawson and A. J. Porter of Hedrick were admitted to membership.

Fall Meeting of the Iowa and Illinois Central District Medical Association met at the Rock Island Club, Rock Island, Ill. Thursday, October Ninth, at Eight p. m. Buffet lunch was served at the close of the meeting.

Program—8 p. m. sharp. 1. Clinical Cases—5 minutes. 2. The Pathology of Inflammatory Joint Diseases—(15 minutes.) H. K. Struck, Davenport. 3. Infectious Arthritis—(15 minutes.) Walter Matthey, Davenport. Discussion on 2 and 3 opened by E. B. Gilbert, Geneseo, Henry Matthey, Davenport, J. N. Downs, Annawan. 4. Pain and its Diagnostic Interpretation.—(20 minutes.) W. D. Chapman, Silvis. Discussion opened by W. L. Allen, Davenport, J. R. Hollowbush, Rock Island. 5. Observations in European Hospitals. D. S. Fairchild, Clinton.

Decatur County Society met at Leon, Thursday, Oct. 30.

1 P. M.—Intestinal Stasis, Its Medical Phases, Dr. C. S. James. Tuberculosis in Infancy, Dr. J. S. Coontz. Hyper-Thyroidism, Dr. B. S. Walker. The Tonsil as an Etiological Factor, Dr. C. R. Harken. Septic Peritonitis, Dr. F. A. Bowman. Joint Disease Due to Infection from Other Parts of the Body, Dr. J. W. Cokenower. The Vagatonic System, Dr. G. P. Reed.

7:30 P. M.—The Heredity of Feeble Mindedness, Dr. Jeanette F. Throckmorton. Discussion, by Judge Thos. L. Maxwell and Dr. Geo. Mogridge.

9 P. M.—Modern Surgical Considerations and Tecnique, Dr. Jacob Geiger. Surgical Treatment of Mastoiditis, Dr. H. A. Childs. Appendicitis and its Treatment, D. S. A. Spillman. Complications on Account of Diseases of the Gall Bladder, Dr. C. A. Stokes.

The Ninth Annual Meeting of the Second District Medical Society of Iowa met in Davenport, Tuesday, October 14, at 10:00 a. m. Headquarters and Place of Meeting at the Davenport Outing Club.

Program: Classification and Treatment of the Nephritides, Dr. Martin H. Fischer, Cincinnati. Traumatic Kidney Lesions, Dr. J. T. Haller, Davenport. The Benzol Treatmnt of Leukemia, Dr. C. P. Howard, Iowa City. The Faucial Tonsils and their Relation to Systemic Infections, Dr. George E. Shambaugh, Chicago. Clinical and Experimental Work on Exclusion of the Plyorus in the Treatment of Gastric and Duodenal Ulcer, Dr. Willard Bartlett, St. Louis.

October Meeting of the Appanoose County Society at the Drake Free Public Library assembly room Wednesday, October 29. Meeting was called to order promptly at 8:00 o'clock p. m. Papers were limited to 15 minutes and the discussion limited to 5 minutes. All papers and demonstrations were discussed together.

Program: The Pathology and Symptoms of Pulmonary Tuberculosis. Dr. E. E. Bamford. The Diagnosis and Treatment of Pulmonary Tuberculosis, Dr. C. S. James. The Practical Value of the Laboratory Aids in the Diagnosis of Tuberculosis, Dr. B. F. Sturdivant. Report of Committee on any clinical cases presented to the society.

On October 22nd, the regular monthly meeting of the Mahaska County Society was held at the City Laboratory.

Dr. H. E. Eisler spoke on his work as health officer, especially advocating the establishment of a dental clinic, and asked the society to support such a movement.

Dr. E. M. Williams briefly reported a cose of actinomycosis which had been referred to him.

Drs. Rodgers, Roberts, and Spurgin were appointed as local committee on arrangements for the meeting of the Mahaska, Marion, and Monroe County Medical Societies, to be held in Oskaloosa, in November.

Wayne County had on November 6th 1913, the following program:

Common Errors in gall tract surgery and mammary malignancy, Dr. C. E. Ruth, Des Moines; Intracapsular fracture with complications, Dr. C. R. Blankenship, Cambria; Fractures, Dr. A. L. Yocum, Jr. Chariton; Malignancy, Dr. G. W. Hinkle, Harvard; Case report, Dr. B. F. McNeil, Humeston; Case report, Dr. A. E. Davis, Seymour; Report of four obstetric cases, Dr. G. H. Sollenbarger, Corydon.

The Hancock County Society met at Britt, Oct. 21. The meeting was devoted to public health. Dr. Sumner of State Board of Health and Prof. Higgins, Sanitary Engineer of State Board of Health of Des Moines, and A. E. Kepford of Des Moines presented papers on the betterment of health conditions in small towns, they were well received and discussed. There was a large attendance, as physicians of adjoining counties were invited to meet with us and participate in the program.

The Semi-Annual Meeting of The Northwestern Iowa Medical Society was held at Calmar, Thursday, October 16th.

Program: Case Report—Pseudo-membranous Enteritis. Dr. H. B. Amy, Decorah. Importance of Early Recognition of Tonsils and Adenoids and Technic of Operation. Dr. W. J. McGrath, Elkader. Reflex Neuroses Due to Some Anomaly of the Eye. Dr. J. W. Jinderlee, Cresco. Case Report and Discussion—By any Doctor present.

The Polk County Society met in Des Moines, Tuesday, October 28, 1913, at 8:30 p. m. Savery Hotel.

Program: The transverse Abdominal Incision for Pelvic Surgery in the Female, John G. Davis, M. D. Observations and Impressions of European Surgery, D. S. Fairchild, Sr., M. D. A Brief Review of the Medical Aspect of the European Travel Study Tour, G. N. Ryan, M. D.

Dr. A. E. Merritt of Council Bluffs presented the subject of the latest findings in X-Ray diagnosis in abdominal diseases before the Wapello County Society the evening of Oct. 21. The meeting was held at the Y. M. C. A. The paper was made more practical by the use of lantern slides.

The Dallas-Guthrie County Society had the following program for its annual meeting held at Panora, October 16th, 1913: Modern methods of dealing with adenoids and diseased tonsils, Dr. D. A. Crawford, Guthrie Center. Some points on diagnosis and treatment of typhoid fever, Dr. H. F. Clark, Stuart. Blood pressure, Dr. W. E. Baker, Des Moines.

Plymouth County Society met in Hinton on Oct. 21,—being entertained by Dr. Robbins of that place. Dr. Walcott of Merrill read a paper on Tetanus with report of a case.—Dr. Bellaire of Lemars read a paper on Facts Relative to our Everyday work.—Both papers were freely discussed and an enthusiastic and interesting meeting was had.

On October 7th, the Benton County Society held its regular annual meeting at which the following officers for the coming year, were elected: President, Geo. A. Wagner, Van Horn; vice-president, Geo. M. Luckey, Vinton; secretary-treasurer, T. L. Chadbourne, Vinton; Delegate for 1914 & 1915, J. E. Luckey, Vinton.

Des Moines Pathological Society met October 17, at the Savery Hotel. Dr. Arthur E. Hertzler, Kansas City presented a paper on A Clinical and Laboratory Study of the Etiology of Sarcoma.

Scott County Medical Society met Tuesday evening, October 7, at the New Hotel Kimball. Dr. Wm. B. Small and Dr. E. R. Shannon, of Waterloo, addressed the Society on "The Waterloo Method of Caring for the County Poor."

American Proctologic Society.

Fifteenth Annual Meeting, held at Minneapolis, Minn., June 16 and 17, 1913. The President, Dr. Louis J. Hirschman, of Detroit, Mich., in the chair.

Proctology and Procto-Enterology.

He stated that, "Proctology come into its own", is in reality the study of the entire intestinal tract, its diseases and their remedies. A Proctologist becomes skilled to a high degree in the medical and surgical treatment of the diseases of the lower bowel. A medical practitioner, sufficiently skilled and competent to treat diseases affecting any portion of the intestinal tract, should be competent to treat all portions. The modern Proctologist, therefore, must be an intestinal surgeon. He must have some knowledge of modern views and discoveries bearing on the digestive tract, as they have a direct bearing on intestinal function and pathology. He should no more limit his activities to the rectum and sigmoid alone, than does the laryngologist to the larynx, or the urologist to the urethra.

An arbitrary line of division which limits a specialist's activities to the lower six or eight inches of the colon is absurd. The Proctologist has no moral right to withhold his special skill in intestinal surgery from the patient who suffers from diseases of the small intestine or upper colon. The larger problems of intestinal stasis, chronic inflammatory conditions, the malignant diseases of the small and large intestines, demand the best that is in every fellow of our organization. He should ever study and fathom the problems of etiology, pathology, and proper therapy.

The establishment of a section on Gastro-Enterology and Proctology in the American Medical Association would greatly increase the value of that organization to every one of its members who comes in contact with diseases of the alimentary tract.

It is the American Medical Association which should foster all that is new and valuable in medicine. It is the greatest medical educational institution in our country; and the Fellows of the American Proctologic Society should be the most enthusiastic supporters of such a section, if established.

Memoir of James P. Tuttle, New York City, and Memoir of Louis Straus, St. Louis.

JOSEPH M. MATHEWS, M. D., Louisville.

These memoirs were inspired by precious memories of close personal association with the late Fellows of the American Proctologic Society, who were both charter members of that organization. In well chosen and deeply sympathetic words the noble character and high professional worth of these lamented Fellows were outlined in a manner which did honor to their memory.

Personal Reminiscences Upon the Subject of Proctology.

JOS. M. MATHEWS, M. D., Louisville.

The author of this very interesting paper tells of his early experiences in his chosen field of endeavor. He relates his meeting many years ago with those renowned surgeons who have made St. Mark's Hospital, of London, so famous.

Having been called "The Father of Proctology", he gratefully accepts the title, and, like a father, he offers good advice to, and will ever cherish what he now terms his offspring, the American Proctologic Society.

(To be continued.)

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No. 6

ADDRESS IN SURGERY

M. J. KENEFICK, M. D., Algona.

Whatever apology is due this society for my appearance upon the program as chairman of the section on surgery must come from our worthy president who is responsible for the appointment. Being neither a surgeon nor the son of a surgeon I shall not attempt to discuss any special topic in surgery but content myself with inflicting upon you a few remarks on the practice of surgery from the standpoint of the general practitioner.

A few years ago this society held meetings under a half dozen or more sections, we had sections on Materia Medica; Mental and Nervous Diseases; Hygiene and State Medicine; Obstetrics and Gynecology; Eye and Ear; Surgery; and Practice.

These sections have been gradually merged until today we meet in three sections and two divisions. Following the precedent inaugurated at Burlington last year by our esteemed President of 1912 we have today in this assemblage the spectacle of the lions and the lambs, the surgeons and physicians lying down together. This society of 2000 members is made up almost entirely of general practitioners. It is a safe estimate to say that not more than 100 or 5 per cent of this number, including the eye and ear men, devote themselves to exclusive specialties. Of our 2000 members about 20 or 1 per cent devote their entire time to the exclusive practice of general surgery.

A glance at the program will convince you that the committee on scientific work has had in mind the greatest good to the greatest number. Two departures from the usual custom of which I desire to call attention are the papers of Dr. McClintock, Prof. of Physi-

ology at the State University and the one by Dr. Shore from the Eye and Ear Section.

A few years ago the ideally trained surgeon came up through the dissecting room as demonstrator to the chair of anatomy, the next logical step was to the chair of surgery. He knew the dead man, the anatomical man, but he did not know the living man, the physiological man upon whom he operated. Today the ideally trained surgeon must come with a many sided development through the laboratories of biology, histology, bacteriology, pathology, and last but by no means the least, physiology. With a simple allusion to the importance to the surgeon of a study of physiology, I leave the elaboration of the subject to Dr. McClintock.

A technical subject like mastoiditis would seem to be out of place in a general session but the fact that many general surgeons and not a few general practitioners with chisel and maul freely assail the mastoid in cases of otitis media makes this a subject of general interest. "Fools rush in where angels fear to tread."

The program contains the names of a few veterans who have been tried and never found wanting among whom are Schooler, Warren, Knott, Macrae and Littig. The others I am confident will render good account of themselves as the program progresses.

Since the advent of modern aseptic surgery the field of surgery has very materially widened. Simultaneously, with a more enlightened public sentiment and greater activity of public health officials, preventable diseases have correspondingly decreased. Twenty-five years ago it was largely in the realm of preventable diseases that the general practitioner found his greatest field of activity. Not so today. The recent graduate observes the eminent city surgeon who wears many diamonds, drives a \$5000.00 automobile, maintains a summer home in the north, a winter home in the south, and a harem in the city, and forthwith elects at once to do capital surgery. The medical colleges have been much to blame for not placing higher ideals before young men.

The Chicago Surgical Society at its regular meeting Dec. 1912 held a symposium on Classifying and Standardizing Surgical Practice. The papers and discussions make very interesting reading and can be found in the April number of Surgery, Gynecology and Obstetrics. During the course of the discussions Dr. D. W. Graham, one of the fathers of Chicago Surgery said: "There is one remedy which I think will correct this evil to a very great extent and that is to let the surgeons reduce their fees one-half or three quarters. When we do that the temptation of an incompetent man to operate on major cases will disappear."

Much has been written by surgeons within the past few years criticising the general practitioner for dabbling in surgery. Among my acquaintances in this state I know a number of country doctors doing a great deal of creditable surgery. I have in mind a young

man in a town of 500 population who can show a record of 100 appendectomies without a death. Who shall say that he is not qualified to do this work?

The last book written by the great surgeon, Nicholas Senn, was one on Practical Surgery for the General Practitioner. In his introduction to the work, Dr. Senn says: "The general practitioner should never lose interest in the surgical work that naturally belongs to him, and should endeavor to keep abreast of the advances and improvements that are constantly being made. His surgical field, although limited, is yet a very important one and fraught with great responsibilities. He must be familiar with surgical diagnosis and must acquire sufficient surgical technic to enable him to act wisely and safely in all surgical cases in which immediate action is an absolute necessity to the preservation of life or the protection of the patient against remote disastrous complications."

The general practitioner has a wide field for the exercise of his skill and good judgment. He has the field of traumatic and emergency surgery, the treatment of all kinds of fractures and dislocations, the large field of obstetric surgery which it is to be regretted has not kept pace with recent advancements in general surgery. With all the material which comes under his observation a proper consideration for the welfare of his patients will lead him to refer many to the specialist.

Coming back to the question of Who is Who in Surgery, how shall we separate the sheep from the goats? All talk of legislation restricting the practice of surgery beyond present day requirements is hasty and ill advised.

At the last meeting of the Clinical Congress of Surgeons of North America a movement was started to organize the American College of Surgeons with the sole object in view of elevating the standard of surgery in America. Such an organization would grant fellowships which would indicate that the possessor was qualified to practice surgery. This movement is an important step in the right direction. This organization is now well under way holding a meeting this week at Washington D. C. for the purpose of perfecting an organization.

From the last number of Surgery, Gynecology and Obstetrics, I quote a few short paragraphs to show that those behind the movement are making a start that should meet the approval of the entire medical profession.

1. The granting of fellowships should be open to all competitors in surgery without favor. Scientific attainments measured by the corporations standard and backed by unquestioned moral character should constitute the requirements of a fellowship.

2. The organization should be inclusive and not exclusive in its methods. It should be a popular democracy with a membership based on efficiency, rather than an exclusive aristocracy based upon position.

3. As public opinion is more potent for good than the strongest laws this great fraternal body should bring its influence to bear upon the profession and later through the creating and maintaining a proper public opinion.

Classifying and Standardizing Hospitals.

It will be a much easier task for the medical profession to classify and standardize hospitals than to classify and standardize the practice of surgery. The greater part of major surgery of the future will be done in hospitals. Without asking for legislation calling for inspection and censorship of public and private hospitals, I believe the hospitals will be glad to coöperate with the profession in elevating their standards of efficiency.

When we as a profession demand certain standards of proficiency in the surgical staffs of hospitals before we refer patients to those hospitals, the hospitals will find it to their best interests to exclude the incompetent. When the American College of Surgery is well founded we may reasonably demand that only men holding its degree may serve on the staffs of Class A hospitals. A directory of classified hospitals should be in the hands of every physician in the state to be used as a guide in referring patients. Personally, I am in favor of the closed shop policy as opposed to the present free for all policy of most hospitals.

The immediate future will demand higher qualifications of the surgeon not forgetting the great men of the past who laid well the foundations by hard work in the school of adversity. My ideal surgeon would measure up to the following standards:

1. A sound mind in a sound body.

2. A thorough preparation consisting of a course in a standard grade medical college, followed by an internship in a first grade hospital, following his internship by at least five years in general practice. General practice will develop in him surgical judgment which can only come from experience. It will also tend to make of him a better diagnostician.

3. A capacity for hard work. The practice of surgery is no place for a drone. He who would succeed must have a capacity for attention to minute details.

4. But above all and over all I would place the crowning qualification, **conscience**.

A conscience that places the welfare of his patient as the first consideration; a conscience that takes into consideration the sacredness of human life; a conscience that drives from his make-up all little, sordid debasing considerations of self; a conscience that disposes the surgeon to consider himself as living not so much for himself as for his fellow man; a conscience which will lead him to act on all occasions the part of "An honest man, the noblest work of God."

OCULAR TRAUMATISMS*

G. F. HARKNESS, M. S., M. D., Davenport.

A complete resumé of this subject is impossible in a short paper, and my purpose is simply to emphasize some of the conditions as I have encountered them during the past year.

Lacerations of the skin over the eyelids whether by a blunt or sharp instrument may be of an infinite number of types, and in the repair of the same our principal endeavor should be to keep the line of wound coaptation as nearly as possible in line with the fibers of the orbicularis muscle. The blood supply of the lids is so rich that infection rarely occurs, and by keeping this first axiom in mind it is most surprising at times how little deformity results from wounds apparently offering a poor cosmetic prognosis.

A wound deep enough to sever the levator tendon with resulting ptosis demands immediate search for the tendon ends, since a few days' delay, with its consequent atrophy of divided tendon, will immeasurably increase the difficulties of successful repair, if not make it impossible, as I have recently experienced in a case seen one week after injury from glass. The entrance wound of small sharp metal objects projected through the air with great rapidity may easily be overlooked, unless examination be carefully made by stretching the skin over the lid. Wounds over 5 mm. in length should invariably be sutured.

Following definite radiating fractures of the bones of the face, orbit and skull, extravasation of blood is almost immediate and with orbital injuries may be accompanied by extensive hematoma. Extravasation of blood in the tissues appearing 12 to 24 hours after injury, appearing first in the lower lid and orbital margin and slowly passing through the cellular tissue under the nose to the other eye is pathognomonic of fracture of the base of the skull. The vision and visual fields in such cases should be carefully watched, since the prognosis is unfavorable as regards the retention of perfect vision. (Würdemann.)

Uncomplicated injuries of the conjunctiva with the exception of burns are generally trivial. The eye will bear with more or less impunity exposure to minute particles too small to be appreciated as foreign bodies. Such exposure when long continued, as from road dust, working in flour mills, and grinders shops, and so forth, and with an inadequate washing away of the particles by the tears, may cause a granulation formation, so called traumatic conjunctivitis,

*Read before the Iowa State Medical Society, Des Moines, 1913.

which is to be differentiated from trachoma. The retention of foreign bodies of appreciable size, particularly in the upper fornix may cause a granulation formation, and only by most careful examination will the true cause be discovered, with the consequent application of appropriate treatment. Caterpillar hairs, bee stings, and the like, barbed so they work their way deeper into the tissues, exert an additional chemical irritative action, with nodular swelling and ulceration, easily to be confused with a tubercular process.

Ecchymosis of blood underneath the conjunctiva occurs frequently and though alarming to the patient is generally considered trivial and the patient so informed. Particularly in those of middle life, however, I have felt well repaid by directing some of these patients to the general practitioner. His examination has frequently disclosed an increased blood pressure, and at a time when advice as to one's mode of living has proved to be of material benefit.

The mobility of the eye ball is well illustrated in those cases of deep injuries of the orbit, puncture wounds from either blunt or sharp objects, in which the eye ball entirely escapes involvement. Such a case is well exemplified in the case of a little girl of seven, referred by Drs. Peck and Decker of Davenport. The child fell face downwards from a porch upon a rose bush, one of the branches of

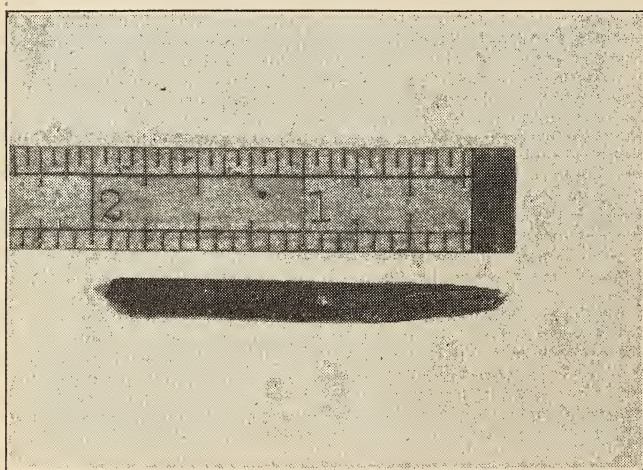


PLATE NO. 1.

Foreign body penetrating upper and inner angle to its entire length. Globe not involved. No inflammatory symptoms. First evidence of optic atrophy two weeks following injury—which progressed to complete atrophy. No light perception after third day. Eye retains consensual pupillary reaction.

which had been cut. This entered through the eyelid at the upper and inner angle of the orbit to the depth of 2 inches, and broke. Dr. Peck in rendering first aid with a pair of forceps pulled out the foreign body with some difficulty, it being imbedded below the skin surface, its entire length. Within a few minutes I carefully

examined the puncture wound with a blunt probe for evidence of fracture of the orbit wall, found none and inserted a small wick of gauze. Atropine was used at this time. Urotropin was prescribed, the patient given an injection of anti-tetanic serum, and the eye covered

with a moist saline gauze dressing. The drainage gauze was removed a little each day until by the fifth day it had been entirely removed and the small wound allowed to close. Atropine was not repeated, the eye showing no indication of inflammatory involvement. By the fifth day, one was able to detect a lack of direct pupillary reaction to light, but a retention of the consensual reaction. The child's answers as regards vision were unsatisfactory, but indicated some retention of vision for three days following the injury. Not until two weeks after the injury did the optic nerve show a suspicious ophthalmoscopic evidence of whitening which was unmistakable in five weeks, and progressed to complete atrophy. No inflammatory symptoms of the nerve head were discernible at any time. This blind eye retains a beautiful consensual pupillary reaction.

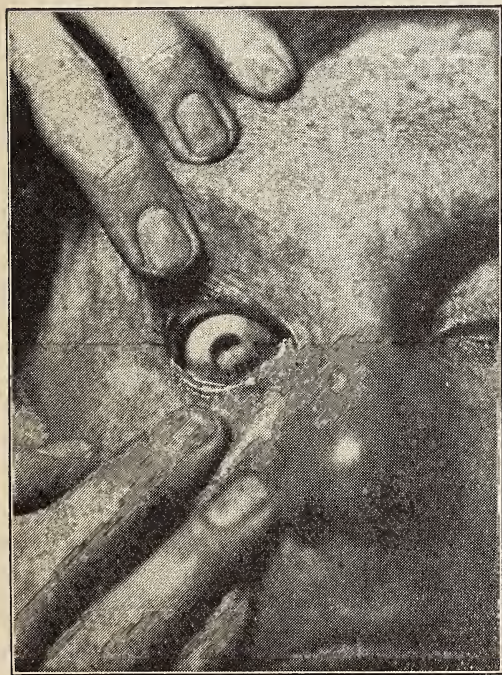


PLATE II.

Corneal leucoma—following traumatic ulcerative keratitis—accompanied during acute process by conjunctival chemosis—and anterior chamber entirely filled with exudate—(picture of beginning panophthalmitis.)

The length of the rose stick and its curve would indicate that it followed the orbital wall to the optic foramen, directly impinging upon the optic nerve. Lack of subsequent inflammatory signs would indicate this rather than that the optic atrophy resulted from inflammatory exudates. The above treatment as outlined is indicated, care being taken that probe manipulations be made very cautiously. With positive evidence of fracture of the orbital walls, and intracranial involvement, the wound should be enlarged and the freest drainage possible established.

Contusions of the eye ball lead to a variety of symptoms, and interesting facts have been demonstrated regarding the pre-

dilection sites for scleral rupture, details of which I shall not enter. The principal point in mind regarding contusions and blows with blunt objects, without rupture of the protective tunics is, though the consequences at first may not seem serious the outcome may really be grave as regards the visual acuity retained. Late degenerative changes with retinal detachment and blindness do occur, and

our prognosis should be guarded. I had this unfortunate experience during the past year in the case of a carpenter whose eye was struck by the head of a flying nail about half way between the cornea and inner canthus.

Abrasions of the cornea, with and without retention of a foreign body are of almost daily occurrence in our practice, and the regeneration of corneal epithelium exhibited is truly remarkable. The superficiality of the abrasion is often in direct proportion to the subjective symptoms of pain, photophobia, lachrymation and so forth. Clean cut wounds do not give much pain. Direct erosion

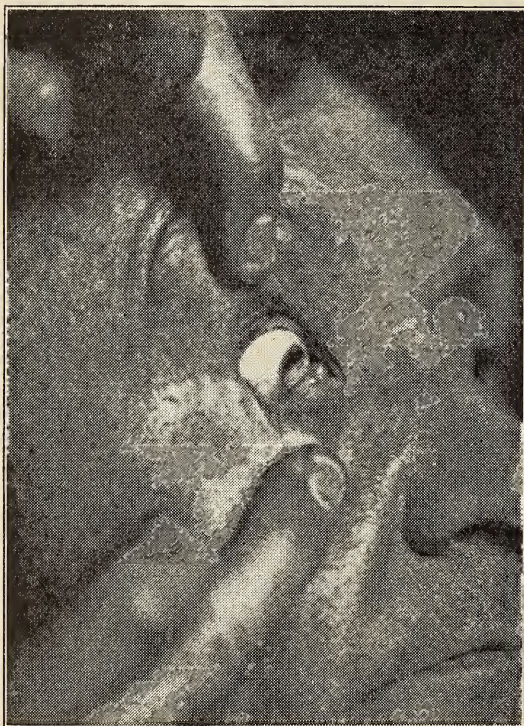


PLATE III.

Beginning corneal staphyloma controlled by actual cautery. Patient retains serviceable peripheral vision—and possibilities of direct vision from an iridectomy.

takes place from an infinite number of causes, commonly the finger nail, a brush, clothing, twigs, straws, hot fluids, curling irons, improper technic, and from retained foreign bodies underneath the upper lid. Focal illumination with a lens, the Berger loupe, the placido disc or reflected light from the ophthalmoscopic mirror, and flourescein are invaluable since small erosions are easily overlooked. Attention should be directed to concomitant conjunctival disease if present, and particularly to lachrymal sac suppuration, since microbial infection is our most feared complication. Eliminating these, the installation of cocaine, irrigation of the conjunctival sac, and a retention pad, with possibly hot applications constitute the treatment. I find a more or less prevailing opinion against giving to the patient a cocaine solution during the first twelve hours. With the patient, however, who has ideas regarding personal cleanliness, I have not hesitated to do so, with instructions to not use the solution oftener than every two hours, and to have frequent recourse to hot moist applications, and keep the eye covered. Certainly the patient has gained much relief, and with the eye covered I have not found the healing materially retarded.

takes place from an infinite number of causes, commonly the finger nail, a brush, clothing, twigs, straws, hot fluids, curling irons, improper technic, and from retained foreign bodies underneath the upper lid. Focal illumination with a lens, the Berger loupe, the placido disc or reflected light from the ophthalmoscopic mirror, and flourescein are invaluable since small erosions are easily overlooked. Attention should be directed to concomitant conjunctival disease if present, and particularly to lachrymal sac suppuration, since microbial infection is our most feared complication. Eliminating these,

Erosions may occur due to newly formed tissue adhering to the lids or from faulty regeneration. In such cases a bandage is imperative, together with the use of atropine and ointment of iodoform or bi-chloride or simply lanolin. Meddlesome interference by the patient in an unclean way is particularly contraindicated, and at the first signs of infection the use of the phenol cautery should be used. Hot applications continue to be of service.

With regard to foreign bodies located in the cornea, a considerable per cent of such injuries are due to iron and steel chips and emery sparks. Needless perhaps to say prompt recovery demands not only the removal, under cleanly conditions, of the foreign body but also the surrounding burnt corneal tissue. Concentration of light and the Berger loupe are necessary adjuncts in performing this office. The ordinary eye spud is a clumsy instrument and not delicate enough to enable one to do good work. Recent articles have shown a variance of opinion regarding the after care of these cases. Some maintain the eye should not even be bandaged. Such is permissible with the ordinary "mote" stuck on the surface of the cornea with practically no apparent abrasion of corneal tissues, but with the epithelium involved a bandage to my mind offers better healing facilities with less chances of infection. The use of the phenol cautery followed by alcohol properly applied is without deleterious effects. Its use is adopted as a routine measure by some, and while I have not felt it necessary to so use it, there can be no real valid objection made, and it is certainly far better to use it in any case of suspected infection than to neglect its use. This procedure I believe deserves a more prominent place in our armamentarium than it has been accorded in the past.

In practically all the shops of any size there will be found some workmen, generally equipped with a cocaine solution who renders first aid, so called "mote remover". This work is surgically unclean and should not be countenanced, and where permitted they should be instructed as to the need of washing their hands, and restricted in their endeavors to the use of a tooth pick wrapped with clean cotton. The use of cocaine only gives the patient a sense of false relief from his troubles, and unclean instruments in unskilled hands means undue laceration of corneal tissue and invites infection. There is almost a total disregard on the part of workmen as regards self protection. Personally I have tried to convert employees to the use of protective goggles while at the emery wheel, but do not believe my efforts have borne any fruit. In our community one firm at an expense of about fifty dollars placed goggles at every emery wheel and the man in charge of labor had to discharge three men who refused to wear them, on the grounds that such orders constituted an interference of personal liberty.

Flap like wounds demand special cleansing care since the retained flap is particularly liable to retain infective material under

its surface. In cleansing corneal wounds this delicate tissue has deterred us from using strong antiseptic solutions, but such limitations may be less regretted, for the general surgeon is finding that infected wounds do better when continually immersed in a hot normal salt solution than in a strong antiseptic solution, for the latter while inhibiting to a certain extent bacterial activity, does greater harm by its action on a surrounding tissues, the results of which inhibit nature's attempts to produce a localized immunity.

The battle to be made against virulent corneal infection, whether accompanied by a foreign

body, or simply the result of an injury as from a twig, with the various types of ulcers is familiar to you all. These cases demand a de-



PLATE IV.

Corneal leucoma following traumatic ulcerative keratitis—accompanied during acute process by conjunctival chemosis and anterior chamber entirely filled with exudate (picture of beginning panophthalmitis.)

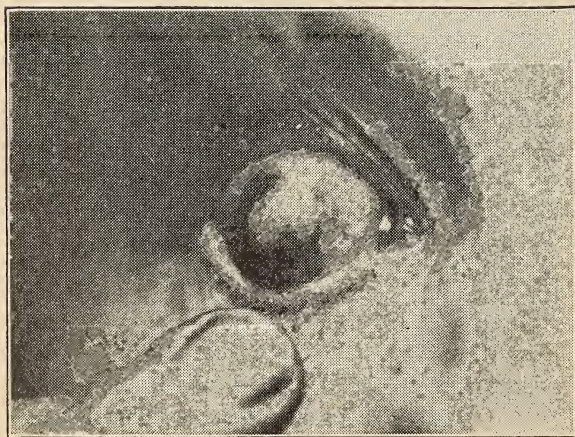


PLATE V.

Beginning corneal staphyloma controlled by actual cautery. Patient retains serviceable peripheral vision and possibilities of direct vision by an iridectomy.

finite distinction from injuries with retained foreign bodies within the globe. Illustrative of such a case, I present pictures 2, 3, 4, 5, taken two weeks ago. A fireman was struck in the eye by a small piece of coal, a little over one year ago, and not seen until four days after the injury when the wound had become infected. Without going into detail as regards the case his-

tory I would say the patient received hospital treatment for eight weeks, the phenol and actual cautery were repeatedly used, as well as recourse to the Saemisch incision. The anterior chamber became

filled with an exudate that obscured the iris excepting a most minute line at its upper periphery, which could with difficulty be seen, some conjunctival chemosis, and the patient retained an indefinite and poor light perception. The picture was that of a beginning panophthalmitis. With a recession of the process, the corneal scar weakened and only by repeated use of the actual cautery at several points was this bulging overcome, and ability regained to withstand intraocular pressure. Four months more elapsed before the eye became quiet and congestion subsided. The patient now has an eye in which his temporal peripheral vision is of some service to him, and further an eye that offers possibilities with an iridectomy, should future circumstances demand working vision with the eye. The point I wish to make is the ultra conservatism demanded in these cases, which at times seem to offer so little that an enucleation would almost seem justifiable. True conservatism as regards the blind eye remaining irritated through a prolonged period of time or becoming recurrently irritated lies in its removal, but cases as the above with a remaining indefinite light perception,

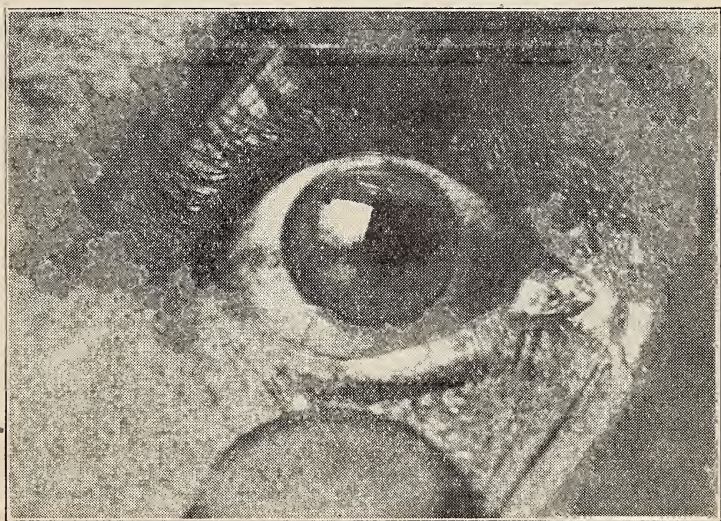


PLATE VI.

Penetrating wound of cornea involving limbus, by chisel. Incarceration of large amount of iris tissue. Eye placed under influence of eserine for two hours before attempting reposition of iris. Small amount of iris tissue demanded excision before complete reposition was possible. Eserine of positive aid in reposition of iris. Resulting vision with correction = 20/40.

and with a chance of some serviceable cornea remaining, notwithstanding the prolonged treatment necessary are not to be so sacrificed.

Incarceration of the iris in penetrating wounds of the cornea presents difficulties as to the reposition of the iris. First the earlier the attempt be made the better chance of success. Secondly the

tractive force exerted by the iris tissue should be considered. Central wounds are less liable to such incarceration, but when present should be attempted after the eye has been placed under the influence of atropine, the tractive force being away from the area of incarceration.

Wounds involving the limbus or peripheral portions of the cornea, should be placed under the influence of eserine, before attempting reposition of the iris tissue, thereby gaining the benefit of a tractive force away from the area of incarceration. I have three photographs of eyes, all of which were placed under the influence of eserine before making any manipulations. The first is of an eye whose cornea was struck by a chisel, referred by Dr. Andreen, of Orion, Ill.,

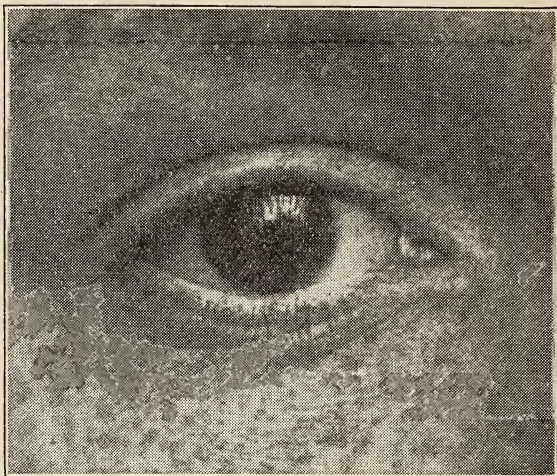


PLATE VII.

Penetrating corneal wound by an awl with incarceration of iris tissue, mushroom like protrusion of iris. Due to small wound. Small amount of iris tissue excised, button-holing same before reposition was accomplished. Eye placed under influence of eserine two hours before reposition attempted. Aid of eserine very evident in making reposition. Resulting vision = 20/16.

seen 24 hours after injury. The amount of incarcerated iris tissue was very large, and it was finally necessary to excise a small amount before entire reposition was accomplished. Resulting vision with correction 20-40. No lens injury. The second is that of a boy suffering a penetrating peripheral wound of the cornea by an awl. The incarcerated iris pouted through like a minute mushroom when seen twenty-four hours after the injury. Due to the small size of the wound, it was necessary to excise a very small amount of iris tissue, button-holing the same before reposition was accomplished. The lens was not injured and resulting vision 20-16. The buttonhole has become appreciably larger than it was four months ago. The third referred by Dr. Bendixen, cornea struck by an arrow, large amount of iris tissue incarcerated in wound. Seen twenty-four hours after injury. No lens injury. Complete reposition and with normal vision. These three classify fairly well the end results as regards the iris tissue after reposition. Even with the first case, with the sacrifice of some iris tissue at the pupillary margin the effect of the eserine I felt to be very evident and a marked aid in reducing the incarceration.

Atropine was used in the after treatment, as soon as the wounds had been given an opportunity to close.

Foreign bodies within the eyeball demand their removal. The lens tolerates the presence of a foreign body better than any of the other interior structures of the eye. The location of such objects before removal is most desirable. While having had no experience with the sideroscope, its use requires too great a delicacy of handling, being prone to error, and of course is limited to magnetized bodies.

The x-ray with localization apparatus as devised by Sweet,



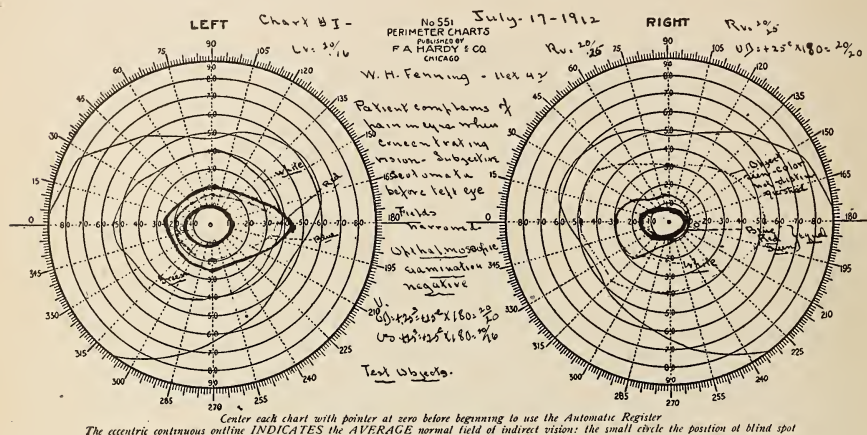
PLATE VIII.

Penetrating wound of cornea by an arrow. The part of corneal scar to be seen in plate. Small, white line in and above center of cornea. Wound extended towards periphery. Large amount of incarcerated iris tissue. Eye placed under influence of eserine for two hours before reposition of iris attempted. Complete reposition. Eserine action being of material aid. Resulting vision = 20/20.

while not infallible, offers the least chances of error. The negative finding with the giant magnet, as regards objective and subjective evidence of traction is not proof of the absence of magnetized bodies. During the past year, a case, from which a small particle of steel was found in the vitreous after enucleation, the giant magnet gave no evidence of its presence. The radiograph, though not taken according to Sweet's method, was also negative. In this case the referring shop surgeon was insistent that the scleral wound was caused by a large object which was found at the man's side after the injury. In the use of the giant magnet particular care must be exercised in trying to exert the tractive force along a line that will

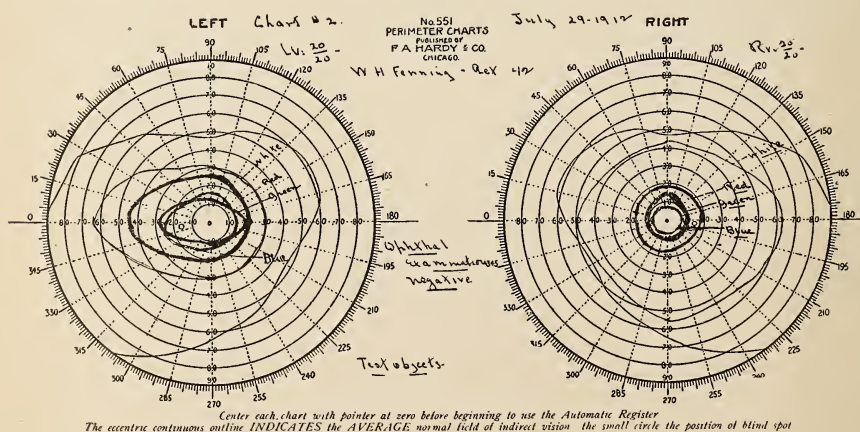
do the least damage to ocular tissue. Due regard to the patient's posture in relation to his work at the time of the injury will aid in tracing the pathway followed from the entrance wound. Illustrative of this factor is that of a case recently seen a few days after being struck by something in the left eye, while chiseling stone. His vision was good, and the eye only slightly irritated. In the lower and outer quadrant of his cornea was a small scar, so small and perfectly healed as to have all the appearance of an old injury.

Behind the upper and inner quadrant of the iris (under atropine) a small lenticular opacity was seen; and considering the man's age, 56 years, was typical of beginning senile cataract. However, the corneal wound and opacity were in line with the man's work. With-



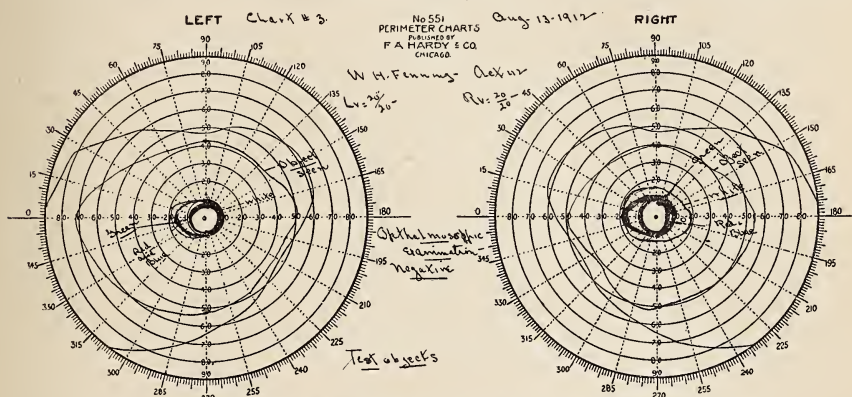
out really expecting to find a foreign body the giant magnet was used, tractive force exerted along the probable pathway of entrance, if the opacity proved to be a foreign body. A small sliver of steel was pulled out of the lens from behind the iris, and allowed to drop into the bottom of the anterior chamber and removed through a small corneal incision. There was no injury to the iris, but the lens developed a traumatic cataract.

Better localization of foreign bodies and a discriminate use of the giant magnet with the use of the hand magnet in certain cases through scleral openings will give better end results.



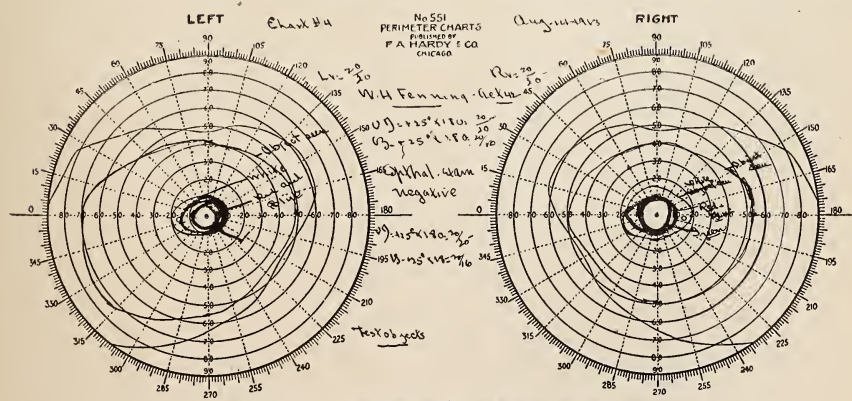
With regard to workmen who are exposed to injuries from foreign bodies, all steel hammers offer less chance of flying chips. Further only workmen with two good eyes should be given such employment. The case above referred to in which the eye was enucleated after negative x-ray and giant magnet tests was particularly

unfortunate, since the fellow eye had a congenital macular exudate, which reduced its vision to about 2-200, and incapacitated this unfortunate young man from further useful employment. Perfected workingman's compensation laws will have the effect of making employers reject men with only one good eye from these occupations.



Center each chart with pointer at zero before beginning to use the Automatic Register
The eccentric continuous outline INDICATES the AVERAGE normal field of indirect vision: the small circle the position of blind spot

There are a class of injuries with which we are going to meet more frequently and which offer difficulty from the medico legal aspect. Electrical workers, particularly the commercial current men, through short circuiting are subjected to severe flash burns. The permanent injuries sustained to the body and cornea are apparent, but the injury to the retinal tissue is difficult to determine, particularly in the case of the prospective plaintiff in a law suit. I find the literature scanty as regards this class of injury and in the so



Center each chart with pointer at zero before beginning to use the Automatic Register
The eccentric continuous outline INDICATES the AVERAGE normal field of indirect vision: the small circle the position of blind spot

called Haab's macular disease as caused by excessive light, central scotoma is the predominating symptom.

In only one case report of such cases do I find an absence of the central scotoma recorded.

In July 1912, I attended a man who received a flash burn from the short circuiting of a 15000 volt current. The external burn was only on the right side. Recovery as regards his face and congestion

about the eye was uneventful. His age was 42 and I later gave him a correction of $\text{Sp.} + 25 = + 25 \times 180$ with vision of 20/10 and 20/16. The accompanying fields of both eyes showed marked contractures as regards white and colors. There was no central scotoma. The patient claimed great incapacity for work on account of his eyes; subsequent examinations were made to try and detect malingeringism. Because he laid so much stress on the fact that his glasses were such a handicap to him, I felt his field answers might lack truthfulness but was not able to prove same from my charts. The company settled his suit, being prepared to fight as regards great loss of visual power, but quickly acquiescing in a settlement when legal responsibility was made probable due to a proven defective insultation.

This class of cases are worthy of careful recording since they lead us into the hands of our legal friends and they present difficulties as to rendering positive opinions. The contractures of the visual fields are said to be permanent.

IMMUNOLOGY—A BRIEF CONSIDERATION OF ITS PROGRESS, AND THE LIMITATION OF ITS PRACTICAL APPLICATION*

JOSEPH C. OHLMACHER, M. D., Clarinda.

Since the time of Pasteur's memorable researches into the realms of bacteriology, medical scientists have patiently sought to reveal the mysteries of animal infection, including that all important one of immunity. It is only within recent years that the study of immunity has emerged from the domain of purely scientific interest and entered that of practical therapeutic and diagnostic interest. This science, with a few of its mysteries solved and with its bright promise of even more fruitful developments, now not only appeals to medical biologists but to the greater mass of physicians. Interest is not only manifested by a demand for publications dealing with the subject but, unfortunately, by an all too general and indiscriminate use of potent bacterial products. That these products are now so generally employed in the treatment of real or imaginary ills of microbic origin, and more often than not by men largely ignorant of their exact nature and of the true significance of the reactions attended upon their use, decided me in the course I should pursue in the presentation of this subject. I must confess that when the chairman of this section invited me to read a paper on Serum and Vaccine Therapy, I fully intended to present the subject in an entirely different garb. I feel constrained to reiterate and dilate upon some of the observation I have previously made concerning the indiscriminate, haphazard and all too general

*Read before the Iowa State Medical Society, Des Moines, 1913.

employment of bacterial vaccines and sera. First, however, I propose to very briefly outline our present conceptions regarding immunity, and indicate the progress and the practical limitations of this branch of medical science.

Active immunity depends upon the principle that when an organism is invaded with pathogenic bacteria, the tissues elaborate certain substances, called antibodies, in sufficient quantities to withstand this encroachment and to resist future similar invasions.

The most important antibodies so far discovered, are the antitoxins, opsonins, lysins, precipitins and the agglutinins. What relation, if any, these various substances bear to one another, has never been definitely proven.

Any substance which has the property of producing antibodies is known as antigen. Bacterial antibodies may be stimulated in the animal organism through the injection of live bacteria, dead bacteria, a mixture of bacterial products and with the bacterial secretions of toxins.

Passive immunity, or the immunity established in animals without the active participation of the tissue cells, results when a specific antibody-laden serum is introduced into the system. This serum is obtained from the blood of animals which have been actively immunized against certain infective agents as, for instance, the diphtheria bacillus.

Standing prominently forth in the galaxy of Pasteur's many brilliant achievements are his successful efforts to immunize chickens against the ravages of chicken cholera, and sheep and cattle against anthrax infection. To accomplish these results Pasteur employed as antigen attenuated or avirulent strains of the bacteria of these diseases.

The only notable successes which have resulted from the employment of antigen composed of minute quantities of fully virulent germs, are those of Ferrin in Asiatic cholera and Thebold Smith and Kilbourne in Texas disease. Attempts in this direction generally prove impracticable even with laboratory animals, as serious symptoms of the respective diseases thus result.

The production of immunity through the injection of dead bacteria was first suggested by Chauveau and later successfully carried out by numerous investigators with laboratory animals. Chiefly through the efforts of Wright of England, has this method gained great prominence in the treatment of human infections. So notable has been the success of the method in the hands of men competent to employ it, that it marks one of the greatest advancements in medical science.

Bail and Weil in 1905-6 announced their discovery of certain substances in the exudates of infected animals, which largely determine the disease producing properties of corresponding bacteria. These substances when injected into laboratory animals produce

only slight or no harmful results. When, however, they are introduced along with sublethal doses of corresponding bacteria (or doses of bacteria incapable of setting up symptoms of the disease) severe illness and even death results. Similar or identical substances were found by Wassermann and Citron in old bacterial cultures. The term aggressins was applied to these substances. Those resulting from the Bail and Weil method are known as natural aggressins as opposed to the artificial aggressins described by Wassermann and Citron. Some authors contended that aggressins are simply endotoxins or toxins found within the bacterial cells. However, no definite relation is found to exist between the quality of aggressins and their ability to enhance the virulence of corresponding bacteria—a fact which disproves this contention. What is of chief interest to us, is that these aggressins are active antigens. Their employment produces a marked and lasting immunity even against pure or most virulent micro-parasites. The application of this method, in the treatment of human infections, is still in its infancy, though its usefulness is apt to be so extended as to prove of much practical value.

Passive immunity, or that immunity produced by the injection of serum of an actively immunized animal, is possible only in such diseases as are dependent upon the action of bacterial toxins. So far as has been definitely proven, it is only in a few of the human infections that the symptom complex is due to toxins, viz., in diphtheria, tetanus, epidemic dysentery, botulism (meat poisoning) and in some forms of staphylococcus infection. True antitoxic immunity has been produced in experimental animals in all of these infections, and the work has been so extended as to encompass the treatment of these diseases in man. It is possible that, under certain conditions, other infections of man may depend largely for their action upon the active secretion of toxins. Among these diseases may be mentioned epidemic cerebrospinal meningitis, typhoid fever, bubonic plague, cholera and infection with the bacillus pyocyaneus.

One of the mile posts which mark the progress of the science of immunology, is that established by the brilliant work of Behring in the production of an antitoxin for the direct and prophylactic treatment of diphtheria. The success of this therapeutic measure is too well known to require further comment. Results with tetanus antitoxin, on the other hand, are problematic so far as the direct treatment of the disease is concerned. As a prophylactic measure its employment is well established.

Wassermann succeeded in immunizing horses against the toxin of the bacillus botulinus. The antitoxin thus produced is very effective in protecting laboratory animals against this bacillus, and is strongly advised in the treatment of humans thus infected.

An antitoxin effective in the treatment of epidemic dysentery is manufactured. It is only useful, however, against infection by

the Kruse-Shiga type of bacillus and not against the Flexner type, which does not produce a toxin.

Several investigators claim to have isolated a toxin from cultures of the meningococcus, but their contentions have not been definitely proven. Nevertheless an immune serum, probably not antitoxic however, has been manufactured by Wassermann, Flexner and others. In 1907 Wassermann treated over a hundred cases of epidemic cerebrospinal meningitis by subcutaneous injections of this serum, with a recovery in 32.7 per cent of the cases. In this country Flexner and Jobling employ a similar serum, but they inject it intraspinously. This method of application is apparently much more effective than is the subcutaneous method, and its practice is now well established. To be most effective it should be administered early in the disease.

Interesting experiments have been performed with the toxins of higher plants and animals, and the respective antitoxins have been developed. Of the vegetable toxins, pollen is the only one of practical interest to medical men. Dunbar's investigations in Europe demonstrated the etiologic relation of the pollen of small grains to hay fever. In this country the pollen of rag weed and goldenrod are held responsible for this disease. Dunbar succeeded in producing an antitoxin of much practical value by immunizing horses against the pollen toxin of small grains. In this country the same thing has been accomplished with the pollen of rag weed and goldenrod. These antitoxins are to be strongly recommended in the treatment of hay fever, but it must be remembered that the serum effective against the poisons of small grains is not effective in the treatment of the disease due to the pollen of rag weed and goldenrod and vice versa.

Immunity has been established in laboratory animals against the toxins of certain snakes, toads and spiders. In the case of certain snake poisons, antitoxins of considerable practical value have been manufactured.

In their efforts to facilitate the study and clear up some of the problems of immunity many investigators employed various proteids, such as defibrinated blood, blood sera, red blood corpuscles, leucocytes and extracts of various organs as antigens. In this manner some highly important diagnostic procedures have been evolved. Of the most important of these tests may be mentioned the Wassermann reaction for syphilis and the biologic tests for human and other bloods.

Having thus briefly considered the progress of immunology and some of the limitations of its practice, I wish particularly to direct your attention to that phase of the subject which is at present attracting such general and varied interest. I refer to the bacterial vaccine therapy of Wright. Such bacterial products as the tuberculins, the antistreptococcus, antipneumococcus and antigenococcus

sera are to be considered with the vaccines, as they probably owe their therapeutic efficiency to the property of stimulating the production of opsonins. It is not my intention to here extoll the virtues of vaccines, but to criticize the present extensive and indiscriminate employment of them.

An editorial appears in the Journal of the American Medical Association for January 25th of this year, which among other trite things concerning the subject, has this to say: "Seven years ago when the first clinical reports of bacterial vaccine therapy were made in the United States an attitude of skeptical pessimism was encountered in the medical profession. To-day a reaction quite to the other extreme is manifest. In fact this positive phase of optimism has carried a valuable therapeutic procedure to limits little short of ridiculous." This statement coming from the pen of one of America's foremost pioneers in immunology but voices the sentiments of many thinking physicians everywhere.

Anyone whose training qualifies him to properly judge of the matter knows that the successful practice of vaccine therapy requires exceptional technical training and a thorough knowledge of the clinical and pathological features of infections, and they also know that the proper study of such cases is apt to be neglected except by the trained expert.

To illustrate the justice of the remark, let us consider some of the important things to bear in mind in the practice of this new method of combating microbic diseases. Thus the question of vaccine dosage involves elements subject to the widest variations, chief of which are the nature of the bacterial products which enter into the preparation of vaccines; the nature of the infection, that is, whether it be acute or chronic, general or localized and the individual's response to the vaccine. In the present state of our knowledge it is impossible to arrive at any definite standard of dosage which can be universally applied. A dose of vaccine which may prove most beneficial to one individual, may set up such an active negative response in another person suffering from a similar infection as to prove harmful and even dangerous. The commercial laboratories have elaborated tables, setting forth the dose of the various vaccines, and indicating the time limit between treatments. At best such tables are but poor guides to the successful application of vaccines, and those who follow them blindly are doomed to witness many disappointing and some hazardous results in their cases.

The use of mixed stock vaccines is to be condemned as being thoroughly unscientific. Their employment is a confession of ignorance on the part of the physician who uses them. The bacterium or bacteria responsible for the disease should first be identified before anything like the proper vaccine treatment can be instituted. The same applies to the employment of antisera, particularly the antistreptococcus serum. Everywhere one finds large amounts of

this serum being used by physicians in practically every case which has the appearance of a septicemia. The majority of these physicians believe they are pursuing the most scientific measure in the treatment of this condition, and they rest contented in this belief regardless of the outcome of their cases. They often make no attempt to identify the germ responsible for the disease. I have been called to see cases of septicemia in which this serum had been vigorously employed for several days, only to find the patients suffering from sepsis in which the streptococci had no part. Some of these cases were moribund when I first saw them and soon died. So convinced am I of the efficacy of properly prepared, autogenous vaccines in this class of cases, that I feel every physician should avail himself of their use. Certainly, in the light of our present knowledge, any physician who fails to make an earnest attempt to at least identify the germ or germs responsible for the disease, before beginning treatment with vaccines or sera, should be subject to severe criticism.

Adami in a paper read a few years ago before the American Medical Association said, in referring to the wide use of stock vaccines: "Excellent as may be the stock vaccines of certain firms, to advertise them light heartedly and recommend them and their employment far and wide, deserves the condemnation of this Association, and all interested in the well being of their fellow men." Such a statement coming from a medical scientist of Adami's standing, should bear particular weight. We cannot help surmising what his opinion is concerning the present extensive exploitation and the reckless and hazardous use of such semi-secret products as Phylacogens. The true nature of these products is but little understood. What should be evident to anyone employing them, however, is that they possess poisonous attributes more or less harmful. This is shown by the marked train of untoward symptoms which follow their introduction into the body. Their use should be condemned, therefore not only because it is so thoroughly empirical, but because great harm and even death may result.

There is a tendency on the part of certain physicians to acquire at a leap that which has been attained by others only through years of careful study, hard work and conscientious practice. There are no short cuts in medicine in any of its branches, particularly in such as require a high degree of technical ability. The exacting technical details attendant upon the practice of vaccine therapy in all its many ramifications, is such as to preclude the possibility of any practicing it who are not thoroughly grounded in laboratory procedure and the art of close clinical observation and judicious application. A similar remark to this was made by me in a paper read before the Dubuque County Medical Society six years ago. I see no occasion to alter this opinion now. In fact I wish to emphasize it, particularly as I understand that certain post-graduate schools

and laboratories offer short courses in this branch of medical science, and that some medical men not adequately trained in the principles of bacteriologic research are availing themselves of this practice of immunology made easy method.

Even in some good general hospitals we find the work in vaccine therapy allotted to untrained interns, instead of being under the direct supervision of a trained pathologist and clinician.

In keeping with this thought is an observation expressed by the great German authority and teacher, Citron, in the introduction to his recent treatise on "Immunity." Speaking of the Wassermann reaction he says: in addition, the practical success the Wassermann reaction has met with, has inculcated the desire in certain schools of physicians, for the carrying out of this test alone, and thus to become independent of the use of large laboratories. To meet this demand, short courses have been established and the serum diagnosis of syphilis taught with lightning rapidity. That such a state of events is absolutely injurious is clearly evident. It is impossible for one to be a specialist in a certain reaction and at the same time be ignorant of the other phases in the study of immunity. Unreliable and erroneous results are the inevitable outcome of such unscientific work. This forceful arrangement applies even more to the the practice of vaccine therapy. Every medical man if he is to be trusted to carry out the various details involved in the practice of opsonic therapy, must first have served several years of apprenticeship in bacteriologic research and the clinical study of infections, under the guidance of someone thoroughly equipped in this branch of medicine.

Such practice as the indiscriminate employment of stock vaccines and the attempt of unqualified medical men to practice opsonic therapy in its various branches, should meet with strongly expressed disapproval and practical discouragement by all progressive and thinking physicians.

The present tendency of certain laboratories to gain commercial supremacy by entering upon an advertising propaganda in which the virtue of their bacterial vaccines and like products are grossly exaggerated, should be checked by the same drastic means as is employed against firms of less pretentious standing, which forsake ethical paths for commercial expediency.

In closing I wish to say that I believe because of the limitations of our present knowledge of vaccines and similar products, that the use of these products should be restricted. Their general employment should be confined to the treatment of chronic localized infections of known etiology, to the prophylactic treatment of typhoid fever and serum treatment of diphtheria, tetanus and possibly cerebrospinal meningitis and hay fever.

* * * * *

Addendum—About a month after the completion of this paper, a series of articles dealing with bacterial vaccine therapy along the

same lines as herein presented, have begun in the Journal of the American Medical Association. This series of articles has been prepared under the direction of a committee appointed for the purpose by the Council on Pharmacy and Chemistry of the American Medical Association. This is an auspicious step in the right direction. the personnel of the committee lending great strength and dignity to this important movement.

Discussion.

Dr. N. Schilling, New Hampton: I do not feel competent to discuss this very scholarly paper. I am particularly grateful for the stand and high ground he has taken in the matter of the ethical side of the question. It seems to me, whenever there has been a scientific or pretended scientific discovery of more or less importance made, it immediately is taken advantage of as a means of fostering the commercial interests of certain firms. Therefore, I wish to compliment the author particularly on the high ground he has taken, and the vigorous condemnation he has expressed in opposition to such methods.

Dr. Henry Albert, Iowa City: The subject of immunotherapy is every where becoming larger and larger and of more and more practical importance. I think this society could well afford to have presented every year a resumé of the work that has been done during the past year, and which is of practical importance.

Dr. Ohlmacher has called particular attention to a phase of the subject which is of special importance just now, especially in view of the advertisements about vaccines of certain biological supply houses.

I want to say a few words in reference to the use of a serum for influenzal meningitis. The work of Dr. Flexner and his associates with reference to cerebrospinal meningitis has been so satisfactory in reducing the mortality from about 70 to 28 per cent that it is exceedingly important that in every case of meningitis a lumbar puncture be made and a bacteriological examination made. In case of meningococcic the microscopic examination alone is sufficient, and the Flexner serum or other serum of like value should be used.

Recently Dr. Flexner and his associates have been working along the line of influenzal meningitis. Dr. Wollstein, who has recently made a review of the literature, found only six recoveries in case of influenzal meningitis. They found, by injecting goats, that they have been able to obtain a serum, which, when introduced into the spinal canal, will cause the recovery of the disease in case of monkeys, whereas the controls which were not treated, succumbed.

I want to take this opportunity of saying that Dr. Flexner has sent to the laboratory of the State Board of Health at Iowa City, a supply of this serum for experimental use. The serum will not be on the market until its value has been proved.

I may also say, whereas in meningococcic meningitis, a microscopic examination alone is sufficient to make a positive diagnosis, this is not true of influenzal infection. Here must also the cultural method be employed. But for practical purposes it is sufficient, as regards the advisability of the use of the serum, to find small Gram-negative bacilli in the microscopic preparation. If any of you have cases of this kind, we will be glad to furnish you with the serum.

SERUM AND VACCINE THERAPY*

E. A. MERRITT. M. D., Council Bluffs

One cannot in but the most cursory manner discuss such a subject without borrowing from the experience and writings of others. The field is so broad, the literature so voluminous, and the recent progress so rapid, that it is beyond the ability of an individual to draw any valuable conclusions from one's comparatively limited efforts.

We can only conjecture what the future holds for biological products in the treatment of disease. That we have at our command today substances derived from bacteria acting in the living organism, and in the dead bacteria themselves, a most valuable adjunct to our armamentarium, is a definite fact, and we lack only the proper knowledge necessary to their successful administration.

Eventually we will all have access to laboratories where dependable vaccines may be made, and for those well known institutions which now supply the various sera, it may safely be said that they are producing dependable products along these lines.

The commercial spirit has prompted our manufacturers to flood the country with unscientific preparations, which have been used in many instances with apparent happy results by many practitioners. A hue and cry has been inaugurated by the Journal of the American Medical Association against these products, but it is a question after all is said and done, if the profession will not have profited in the end, for something has been started and it is a notorious fact that the average doctor is not equipped with a self starting device.

Recent developments in vaccine therapy may be unscientific and discreditable, and it is undoubtedly high time for the individual physician to realize his responsibility in their administration, but the controversy will bring order out of chaos in time. It will operate for the general good eventually. We have, to illustrate, had a knowledge of typhoid fever for many years, but it required a sacrifice of many hundred volunteers before earnest efforts were made to combat the disease.

The aim of bacterial therapy is to stimulate the natural powers by means which are specific for each separate infection, so that recovery may ensue. Its application is to produce an immunity so that the body cells may resist infection and aid the body cells to overcome the infection, after it has become established.

The various elements operating to produce an immunity are the phagocytes which ingest the bacteria, the opsonins which prepare the bacteria for ingestion, and a specific one which exists for each kind of disease producing bacteria. Agglutinins which clump them;

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bacteriolysins which dissolve; bacteriocidins which kill and antitoxins which neutralize the poisonous substances produced.

Bacterial vaccines are suspensions of killed bacteria in normal saline solution. Theoretically it would be advisable to treat bacterial diseases with vaccines made from cultures of the organisms operating in a given case, but practically this is not always possible, and fortunately in many instances unnecessary. The immunity of typhoid is secured by the administration of stock vaccines, and the successful treatment of meningitis and gonorrheal arthritis depends and always will, solely upon the use of stock bacterial vaccines.

Failures in the treatment of infections with bacterial vaccines are due mainly to two facts; first, incorrect etiologic diagnosis; second, improper doses; to which may be added the virulency of the infection, and other conditions which lower vitality, operating in the individual patient. It is held by prominent laboratory workers that vaccines prepared from cultures grown for a long period on artificial media, and from as many varieties of a given bacterial species as possible, produce the best results. Until a more simple method than Wright's determination of the opsonic index of a patient's blood serum has been devised, the clinical symptoms will have to constitute a sufficient guide for the use of vaccines, and it is the general opinion that the latter suffices in a vast majority of instances. It has been pointed out that a patient suffering from a disease in its incipient stage may be vaccinated and the disease made worse in consequence. In other words, patients already overwhelmed by toxins are further insulted by the additional poisons in the form of dead bacteria. This objection has been strongly urged against the use of typhoid vaccines as a prophylactic agent in the presence of an epidemic, but according to Major Russell, U. S. A., this is due to the very exaggerated idea of the importance of the "negative phase", which expression originated with Wright, who believed that the body lost some of its normal protective agencies during the reaction immediately following the administration of the vaccine. The dose now in use produces no evidence of a negative phase, although it is of course possible to produce a permanent negative phase by superimposing one large dose upon another in rapid succession. A certain time is required for the production of antibodies which varies from three to five days in acute cases, and from three to eleven days in chronic cases.

The type of infection, its nature, extent and severity are all important factors in determining the amount of vaccines to be given, and the initial dose of the vaccine is difficult to accurately determine. If no improvement follows after a first dose, subsequent doses should be increased until amounts large enough to prove the inadequacy of the treatment have been given. If a clinical reaction, viz; malaise, rising temperature, aggravation of local symptoms, follows an initial dose, the second injection should be smaller.

Typhoid Fever. The profession is thoroughly familiar with the wonderful results of typhoid vaccine as an immunizing agent, but as a therapeutic agent the administration of the killed Eberth bacilli have not had a fair trial. Enough cases however have been reported to warrant the hope that this vaccine will be a sheet anchor in the future treatment of the disease, and I believe we should all familiarize ourselves with its use. The prophylactic administration of typhoid vaccine will certainly curtail the necessity for treatment of any kind.

The Board of Health of the City of New York, and more recently of other cities, is offering typhoid vaccine without charge to any who care to avail themselves of the offer, and the recent and unprecedented action of our democratic president in having forwarded at the government expense, vaccine points and typhoid vaccine to the flood devastated districts in Ohio, has done more to stimulate popular interest and confidence in these measures than any other item I can call to mind. It also conclusively demonstrates that we have at last a chief executive who is a friend of the people and medical profession, and who is not afraid to stand for modern ideas of treatment advanced by regular physicians.

Cerebrospinal Meningitis. Up to the present more than two thousand cases of this disease have been treated by antimeningococcic serum, and so far as I have been able to ascertain, with no bad effect,—although a recent article in the Journal of the American Medical Association would lead us to believe that the use of tricresol as a preservative has a deleterious influence on the nerve centers of the spinal cord. A striking reduction in mortality is the general rule. The serum produces its beneficial effects upon the meningococci, the multiplication of which it inhibits. A recent epidemic of the disease in Council Bluffs has given the physicians of that city an opportunity to observe the effects of its use. Twelve cases in all, of which eight died; three without treatment. The youngest patient treated was eight, the eldest fifty-two. In a suspicious case a spinal puncture should be performed without delay. This is generally an easy procedure, requires a suitable needle, a local anesthetic, rarely a general anesthetic, and appropriate antiseptics. An opaque fluid with or without symptoms, or a fluid under pressure with symptoms, are the indications for the serum. It may be given by the gravity method, but I can see no reason for it. The average dose to an adult being 30 cc daily until the spinal fluid is clear or until the diplococci disappear. Marked amelioration of symptoms follows the first dose. The earlier the injection the better the results. A dry tap indicates that you have not reached the canal. Judging from a few of the cases reported in Council Bluffs and adjoining towns, I am convinced that this disease is claiming more victims in Iowa than our vital statistics would indicate. In our epidemic we have had all types: malignant, death in twenty-four

hours; and the mild, in which a most careful physical examination failed to elicit all of the cardinal symptoms. In all cases the cerebrospinal fluid was opaque and contained intracellular diplococci. Recently in an article on the use of serum as a prophylactic in this disease, by J. H. Black, of Dallas, Tex., he concludes by stating: experimental evidence warrants us in concluding that prophylactic vaccination is a measure of the greatest value in the control of epidemic cerebrospinal meningitis.

Tetanus. The prophylactic administration of antitetanic serum is indicated in all wounds where there is the slightest suspicion of tetanus infection. Berghausen and Howard report ninety-six wounds including punctures, lacerated, cannon cracker, gun-shot, blank cartridge and powder burns, in which antitetanic serum was given and not one case developed tetanus. In eight cases of the same type in which the serum was not used as a prophylactic measure, all developed tetanus and six died. A report from the Journal of the American Medical Association, after an exhaustive inquiry of Fourth of July accidents, concludes that not a single case of tetanus developed in which the serum was used as a prophylactic measure. As a curative measure it is much less efficacious. However an interesting case of Dr. Macrae's the past year in which after excision of the wound an intra cerebral injection of serum was given followed by daily doses for a week, produced a permanent cure.

Diphtheria. The early administration of sufficiently large doses of antitoxin is the only treatment. A failure to administer this remedy is a suspicious case or one well marked, constitutes grounds for criminal action. Recent advices are to the effect that a serum has been devised which will confer permanent immunity. How reliable this is I cannot say.

Tuberculosis. Tuberculin has not by any means become established as a therapeutic agent. Conflicting reports are not conducive to confidence in its use. The Chicago Municipal Sanitarium in an analyses of several hundred patients, concludes that its judicious use in selected cases is of value. The literature on the subject would argue for its use in urogenital forms, early pulmonary cases, cases well advanced in which the general condition is good and the symptoms slight. I believe it should not be given outside of sanitarium or hospital where the patient can be kept under constant observation.

Erysipelas. The administration of polyvalent antistreptococcic serum in all cases of this disease should be the rule. Bridges reports fourteen cases with marked amelioration of symptoms and early recovery. The writer has had five, one of which was decidedly severe in a man sixty-eight, complicated by acute nephritis. Twenty cc on the first day, followed by twenty cc the next day and thereafter ten cc a day for three doses, resulted in a cure. The recovery was tedious however owing to sloughing of skin and superficial fat

of upper eyelids. One severe post partum erysipelas of the face, recovery in a week. No particular effect in the spread of the infection was noted in any of the cases. Most marked is the early reduction of fever and control of delirium.

Gonorrheal Arthritis. Reports as a rule are favorable. The writer has had several cases, one in particular a young man with gonorrheal knee joint. Eight ounces of fluid aspirated, vaccines administered, no other treatment excepting rest in bed. Permanent recovery in two weeks. Alleviation of pain and early restoration of function were apparent in all.

The treatment of boils and carbuncles yields brilliant results. Acne yields usually, but with the foregoing, the autogenous vaccines could be used, and the dose of the vaccine not as large as usually recommended. Colon bacillus and staphylococcic infections respond to vaccine therapy while the hemophilias and the purpuras are now recovering under the use of normal horse serum. In pneumonia the use of the Rosenau serum is being advocated and is prepared in a special manner with which I am not familiar. A prominent physician of wide experience remarked in my presence that should he develop pneumonia, he would insist on its use. Billings reports sixty-five cases treated with this serum with encouraging results.

A review of the history of medicine makes one enjoy a much greater sense of security for the privilege of living in the twentieth century. By comparing smallpox, tetanus, typhoid, hydrophobia, meningitis, erysipelas, the plague, cholera, and other infectious diseases, before and after the advent of immunization, the life saving character of this new branch of medical practice becomes apparent. Surgery has taken the place once occupied by medicine. There is hope that medicine will in many instances supplant surgery, but whatever striking discoveries there are in the medicine of the future, it is no great hazard that they will be along the lines of biological products.

Discussion.

Dr. L. W. Littig, Davenport: Just one point I wish to emphasize and that is as to prophylactic vaccine for typhoid fever. I am not convinced of its value. About the time that vaccination came, the pernicious fly was discovered. There is absolutely no chance for a fly in a well managed hospital, and something is preventing typhoid fever. Whether it is "swatting" the fly or the vaccine that is entitled to the most credit, I do not know.

I want to say to you that you must resort to the prophylactic use of vaccine in tetanus. A few months ago, there was a case of a young boy that had his foot crushed between the bolster and spokes of a garbage wagon, with a tetanus death. This was followed by a damage suit for twelve thousand dollars because of the non-administration of the tetanus antitoxin. Whenever you have an open wound, as occurs on the farm, about the barn yard, and around the manure piles, you must administer the tetanus antitoxin. In accidents of this class the value of antitoxin has been so thoroughly demonstrated that the public understands that it must be given. If you do not use it, you will probably lose your pa-

tient, and in all probability have a malpractice suit. In these accidents you must administer tetanus antitoxin at once.

Dr. E. A. Merritt, Council Bluffs: I do not quite appreciate the position Dr. Littig takes in regard to typhoid vaccine. It seems to me this thing has been most thoroughly worked out by the most capable men in the world. If I was going into a foreign country, or elsewhere, where the disease existed, I would insist on being vaccinated. I did vaccinate my brother six months ago. It may not do any good, but it made me feel better.

It is certainly true that typhoid is carried by many other things than flies. Certainly the fly has nothing to do with typhoid fever in Council Bluffs and other places, in the winter time. I think we had better say that the typhoid vaccine will at least afford a certain degree of immunity in typhoid fever and go on that theory until somebody jumps up and proves that it does not.

THE TREATMENT OF LATERAL CURVATURE OF THE SPINE*

ARTHUR STEINDLER, M. D., Des Moines.

Disclaiming any originality I simply wish to submit to the Society in detail the reasons for the remarkable change which our view points have gained concerning this deformity within a period of less than two years.

In June 1911 there appeared in one of the eastern medical Journals a paper of Dr. E. G. Abbott of Portland, Me., on a method of rapid and complete reduction of the deformity in fixed lateral curvature of the spine. It was at once taken up by the entire orthopedic profession with great attention and eagerness, not, however, without meeting with extended and serious criticism, so unusual and startling were the facts revealed.

In April 1912 a second article of Dr. Abbott's appeared on that subject in which he enlarged greatly upon the technic and the results of his method. This time the publication was received even with greater interest and evoked Nation wide comment among the profession.

At the national orthopedic meeting in Washington, June 1912, the question of the treatment of lateral curvature was discussed very exhaustively by the leading orthopedic men. Discussion centered on Dr. Abbott's method and general recognition was given to his work on this occasion. Those who have visited him could readily satisfy themselves of the validity of his claims.

To elucidate the principles, the technic and the results of this method is the object of this paper.

The study of the pathogenesis of fixed lateral curvature must take its start from the stage when the disease is nothing more than a postural habit, when the assumed posture is still voluntary and physiological, when there is neither a limitation of the lateral motion nor any permanent signs of rotation. Everyone is familiar with the picture of the so-called school scoliosis, occurring in the growing

*Read before the Iowa State Medical Society, Des Moines, 1913.

age from the child's peculiar attitude in writing. Sitting at his desk he assumes a position of forward flexion of the body with one shoulder elevated and drawn forward, the other dropped and drawn backward. The lateral bend of the spine is produced in this complex position of forward flexion and shoulder elevation, and in this position only. From this stage on the deformity progresses steadily under the continuance of this faulty attitude passing the stage of flexibility, until the curve becomes fixed and the rotation unyielding. Later on the well known structural changes take place, guided by a law which has been formulated by Wolff as the law of functional adaptation. Not only the bones but also the muscles and ligaments change their shape and internal texture to comply with the demands of changed mechanical conditions. Furthermore, this law not only holds true in regard to change from normal to the pathological, but also in the converse, that is to say, that in lateral curvature, even at the stage of structural changes, a changing back to the normal is possible.

Abbott has not failed to furnish us with the proof, that correction and overcorrection is possible, provided the spine is secured in his flexion position, which is indispensable for that purpose. He secured as a model a medical student in whom he was able to produce a typical, fixed lateral curvature with rotation, after fixation in plaster jacket for one month. The x-ray also showed true rotation of the ribs and vertebral bodies along with the lateral curve. This artificially produced curvature was found to be perfectly rigid and remained unchanged when the patient resumed erect position after the removal of the cast. Then, in order to prove the reversibility of the deformity another cast was applied under reversed conditions; the body was bent forward, but this time the other shoulder was elevated and drawn forward, and lateral traction was applied from the other direction. After removal of this cast one month later there appeared a new artificial scoliosis exactly the opposite of that primarily produced. The x-ray picture now showed the curve to the opposite side and again true rotation of the ribs and vertebrae at the convexity. So it was found that the forward flexion, the position in which the deformity originally develops, is the unavoidable gateway through which the deformity must pass back to correction and overcorrection. This doctrine of the total reversibility of the curve was the object of the most severe criticism in this question, though in principle it is not so surprising to those familiar with the experimental studies carried on by Dr. Lovett some years ago. Those of us, however, who had seen the original x-ray and the results obtained by Abbott's method had to admit that his claims are well founded.

During the year and a half of its existence the technic of the method has changed somewhat and is still open to improvement. I shall endeavour to give a brief description. A hammock of strong canvas webbing, long and wide enough to accommodate head and

body of the patient is cut in trapezoid shape with the one long side a few inches longer than the other one. In this way the shorter side may be drawn tight, while the other sags down. By means of steel rods the hammock is suspended in a frame work especially constructed for the purpose. This apparatus consists of a system of rectangular gaspipe frames, resting on four uprights. In a newer modification a superstructure carries a fourth and narrower frame higher up, to permit suspension of legs or knees. The gaspipes can be made to turn on inner rods by means of ratchets and they also carry fasteners for the heavy muslin bandages which are wound around different parts of the thorax. Thus traction can be applied on the body in all possible directions, when the patient is resting in the hammock. Preparatory to the application of the cast the patient is placed in the frame for half an hour daily for a period of three weeks and traction is applied the effects of which are followed up by the x-ray. In placing the patient in the hammock the side of the original curve rests upon the shorter side while the concavity of the original curve sags down in to the hammock producing in this way the desired forward flexion of the body. By raising the pelvis and suspending knees and heels flexion is further increased. Traction is applied in the following direction. The shoulder of the side which is to be made scoliotic is elevated and pulled forward. The other shoulder on the side of the original curve is held backwards by the bandage and pulled down. Traction is applied on the trunk to produce the curve on the side of concavity by pulling the original curve to the other side and using counter traction above and below. Rotation is produced by forcing the rib prominence on the back forward, the frontal costal prominence on the other side backward with bandages applied in diagonal direction. To secure the flexion of the body the pelvis and abdomen is held down tight.

Patients with not too rigid a curve will soon be seen to go into correction and overcorrection under the influence of properly applied traction.

The maintenance of this amount of correction and the continued application of corrective forces in the cast is the object of the Abbott plaster of paris jacket.

Two or three layers of stockinet or lisle are pulled over the body and pads of heavy felt placed between the stockinets. One pad covers the convexity of the curve, one each is placed in the armpits, one pad covers the costal prominence in front of the concave side, one pad is placed over the sacrum and one on each iliac crest. The patient is then placed in the hammock, the traction bandages are applied and a plaster jacket is made. The cast reaches high up on the side of the overcorrection forcing this shoulder upward and forward. It is cut down lower on the other side to allow the shoulder to drop, at the same time forcing it backward. The complicated technic calls for good assistance and reliable plaster material. As

soon as the cast has hardened sufficiently, windows are cut out in the following manner: 1. a large window in the back at the side of overcorrection, 2. a smaller window three to four inches in front of it, 3. another one over the sternum and epigastrium.

Very soon one may see the bulging out of the thorax through the large back window. The spine gradually follows the traction. Further rotation is accomplished in the cast by means of heavy felt pads which are slipped through the windows in front and on the side in direction corresponding the desired overcorrection.

The period of fixation in plaster casts is from four to five months changing the cast only when no further overcorrection can be accomplished with the pads. Then the casts are replaced with a removable celluloid jacket of similar shape which laces in front and has a large window in the back. This jacket is worn steadily for about six months, to be removed only for the daily exercises and massage. The after treatment is of paramount importance. It changes the spine from the overcorrected to the normal position and develops the muscles which after the rigid fixation are considerably atrophied.

The wide recognition which the method has gained in so short a time speaks for itself. Those who have witnessed the manifestations of unusual interest which follows Abbott's publication will not fail to appreciate their importance. The treatment of the lateral curvature of the spine has always been one of the weakest point in orthopedics. The problem has been studied incessantly for many years, some prominent orthopedists have devoted their life work to it. But of no other method can it be said that it has accomplished near as much as the one I tried briefly to describe. It is not claimed to be unfailing. Abbott himself has realized its limits, or, as he puts it, he cannot raise the dead. But the great merit of his investigations is the rationality of his treatment; the rigid logic of his principles, the consistency of his results. These are points which reach beyond the sphere of the orthopedist and every practitioner of medicine should be conversant with them.

ALBUMINURA*

M. H. THIELEN, M. D., Grundy Center.

In these days of severe criticism, and expert scientific knowledge, it would hardly be advisable for the ordinary country practitioner to advocate any new medical ideas, but it is well for all of us to sometimes halt and reflect upon the more simple problems confronting us, and thus be a little safer in making statements concerning the graver cases that we often meet.

Functional albuminuria is common to all of us; so common that it is often passed by unnoticed, and not taken into account until the case has become a serious one.

We all know that albuminuria, due to pathologic change, inflammatory or degenerative in the kidney is most important and usually serious. Albuminuria whenever discovered is of great interest to the physician, and of importance to the patient. Not many years ago the ordinary clinician was greatly alarmed by the presence of albumin, no matter when or in what form discovered. Today a great many of us are just as heedless concerning it's presence.

The quantity of albumin in functional albuminuria is usually small from a mere trace to one-tenth to two-tenths of one per cent. Authorities differ as to it's origin, the histological changes are very slight, those mentioned usually taking place in the tubes of the kidneys rather than in the glomeruli.

For convenience we will consider functional albuminuria from three different view points; viz.

First: we would mention the alterations in the blood pressure produced by ovarian cysts, uterine fibroids, or gravid uterus, sufficient to cause the presence of albumin. Chemical analysis may reveal albumin in the urine, and the microscope may at times show tube casts, but after the radical removal of the cysts or fibroid the albumin will disappear.

Second: sudden exposure to wet, and cold may produce such a congestion of the internal organs that albuminuria results. Yet, when the normal blood pressure is restored the albumin will disappear.

Third: cardiac disease producing hypostatic congestion of the kidneys will cause an albuminuria which disappears as the cardiac condition improves under treatment, before permanent histologic changes occur in the kidney tissue.

The gravid uterus is the most frequent cause of albuminuria. We have all had many cases of this kind. Although at the beginning simple; they sometimes become serious. How do you manage them? Pernicious anemia which produces an impoverished nutrition of the cardiac muscle, lowering the propelling force and thus

*Read before the Iowa State Medical Society, Des Moines, 1913.

causing a general hypostasic which affects renal cells—reducing their normal tone, causing the albuminuria.

The febril albuminurias should be classed under this head. We know that the severity of the infective process, and the pyrexia accompanying the disease changes the quality of the blood to such an extent that pronounced changes take place in the glomeruli of the kidney, producing albuminuria.

It is sufficient when we state that in most cases with ordinary care the albuminuria will clear up with the termination of the disease with perhaps a few exceptions in scarlet fever or diphtheria. We find that adults suffering from scarlet fever, measles or diphtheria are more apt to manifest histologic changes of the renal structures, that are children, but they usually prove to be transitory.

In most cases of recurrent appendicitis you will find albuminuria present. In some instances operation is deferred on account of the presence of albumin, or a few tube casts. If your patient has been fortunate enough to escape operation after the first attack do not hesitate to operate because you detect an albuminuria, as in nearly all cases this affection will clear up after the operation.

We still have another variety of albuminuria which should receive mention and that is dietetic albuminuria; here the presence of albumin is due to the ingestion of large quantities of proteid foods. The albumin appearing and diminishing with the quantity of proteid food taken.

What importance can be attached to these findings? There are three classes of cases where especial care should be taken. First: pregnancy, some writers claim that albuminuria exists in five per cent of all pregnancies, and there are but two conditions in which it is of special importance, when it is caused by an excess of toxins passing out through the kidney tissues, associated with diminished excretion and second when the albumin is found in conjunction with tube casts and is a part of the evidence of nephritis.

All cases should be frequently and thoroughly examined, so that we may be sure to know whether we are dealing with a simple albuminuria or a case of nephritis.

In life insurance examination it is all important, too many hasty conclusions are formed from a mere trace of albumin. Repeated examinations at different periods of time to determine the quantity, permanency and source of albumin are essential for correct conclusions, in order to properly classify the person examined.

In conclusion let us state that the differential diagnosis is all important; functional albuminuria is more or less in constant albumin small in quantity, seldom find casts, heart sound and condition of arteries not affected usually curative. It is found in conjunction with acute febrile diseases; diseases of the heart and lungs; presence of abdominal tumors, pregnancy, chronic affections of the abdominal viscera, exposure to wet, cold and diet.

SOME LIMITS IN THE OPERABILITY OF MALIGNANCY*

F. ROSENBLADT, M. D., Des Moines.

In nearly every paper written now on the question of malignancy, we see the statement: if only we could get the cases for operation earlier we could get better results.

In order to show that better results are needed, permit me to quote Dr. J. B. Murphy, discussing Halstead's report on results of breast amputations. He said: an analysis of this class of cases disheartened me much, and an analysis of the more extensive operations done in various parts of the body, later has added to my discomfort, and has made the cancer field rather a hopeless proposition to me. There has not been any material improvement in a quarter of a century. Here is another quotation from him: so disheartening is that particular type of case, occurring in rather stout women, with carcinoma of the breast at 43, that I believe the patients will live longer and better without the removal of the breast.

This may be an extreme view, but I believe we can consider one point settled. It is, that results should be better.

Now in order to get cases of malignancy to the surgeon earlier, up to this time the stress has been laid on the method of procedure, namely, "The education of the family physician and the laity to the need of earlier operation."

There is one more effective way to bring about earlier operation, and that is by allaying the fear of operation in the laity: by a lessened mortality; and by refusing operation, unless we are very sure improvement can be attained.

To make the meaning clear let me illustrate: Dr. S— has two patients with cancer of the uterus. Mrs. A— a rather young woman, has an adeno-carcinoma of the cervix, partially fixing the uterus and extensive enough to involve a part of the vaginal wall.

Mrs. B— has a very small ulcer on the cervix which he diagnosis as a beginning squamous epithelioma.

Mrs. A— is referred to a surgeon. He does a Wertheim after she has been in the hospital a few days and thoroughly examined by several men. He does it just as well as it could be done anywhere. Prior to operation he said to the patient: "I will do the very best I can for you, it is your only chance, and he was right."

Now one of two things will happen to Mrs. A—, she will die as the immediate result of the operation, or she may live from three to six months and then succumb to metastasis.

This case understand, was a case of adeno-carcinoma of the cervix, in a young woman, and adeno-carcinoma of the cervix at that age, and to that extent, practically never gets well,

*Read before the Polk County Society, Sept. 30, 1913.

Mrs. B— hears about the fate of Mrs. A—, she consults the surgeon and learns that she must have practically the same operation as Mrs. A—. She finds some one who says he can cure her with paste, and she wants to try it for awhile.

There are several more in the same community who hold off from an early operation, by knowing the fate of Mrs. A—. The laity judge by results.

Let us analyze critically now, the procedure of our surgeon. And this case though hypothetical, is typical. It occurs every day in some community throughout the country. His plan of action is absolutely unassailable from any angle of the surgical principals here-to-fore set up. He made his diagnosis correctly: he estimated the danger well; he told his patient the truth; he said he would do the best he could and he did. Moreover he carried it out as well and as skillfully as any surgeon could. But he realized that he was close to the surgical limits of operability.

But in his quieter moments, our surgeon gets to thinking the matter over. He sees that several really curable patients are dragged into the incurable stage as a result. He begins to wonder whether Mrs. A— really had a right to the knife. He concludes that it would have been better for surgery at large, if he had told Mrs. A—, that she had passed the stage of operability in malignancy.

He sees that in the surgery of malignancy there is a law of diminishing returns, that is: the greater the mortality, the more patients will be kept from operation. So he formulates for himself this law of guidance in malignancy. If in the judgment of the surgeon, the operation will detract from the sum total of human health and life, actual or potential, then the operation must be refused.

This means in brief, that we must consider not only the patients good, but also the welfare of the patients friends, who are considering an operation, and who may be really curable by surgery. There is no question but that some rule of this sort will be set up for guidance in the future. I take it as self evident that it will lessen surgical mortality for it will eliminate the worst cases. There is no doubt but it will lessen the fear of surgery, for the results will be better.

Someone will say that this is too hard a rule, that it is inhuman to deny the individual the small chance he has from a radical operation if he wants to take it.

But this is nothing more than a plea for greater conservatism toward the most hopeless and radical operation for malignancy, substituting for them, palliative procedures.

What right has Mrs. A— to an extra-hazardous operation: that according to the rules will do her little good when it will keep from an early and really curable operation, several of her friends.

Would it not be better that Mrs. A— go home after a simple cauterization of the exposed carcinomatous area, a procedure that

has little danger, and will do her as much good as a radical operation. She will go home and tell her friends that she was denied the privilege of the knife, and will inculcate no fear of the same.

We must in any event consider some things which cannot be revealed by an objective examination of the patient: for instance Mrs. C—, aged 40, has known of a lump in her breast for six months. She has gone day after day to an osteopath for months to have the tumor kneaded and rubbed, the very thing that should not be done, if we do not wish to have any of the wild cells escaping into the circulation. This is one of the things that must be considered in weighing the operable limits of the case. This rule will throw some greater responsibility on to the laity. If they wish the radical curable operation they must not foolishly place themselves beyond safe, operable limits.

But it will also increase the responsibility of the surgeon, for it will demand of him that he gets correct information on diagnosis and pathology. The surgeon must know or find out which phases of malignancy are operable and which are in-operable. The technic of these operations has outstripped diagnosis and pathology.

Dr. Bloodgood³ instances three cases which came to him in one year with a diagnosis of sarcoma of the bone. They had been treated with Coley's serum. They had refused amputation. In each case no Wassermann had been made and in each case it was positive. And after giving salvarsan, the swelling disappeared.

In order to delineate the operable from the inoperable cases of malignant diseases, the cases should be seen by several men, the more the better. I care not how keen an expert one man is: he may have his days when he does not see as clearly and as keenly as on other days. I know of one case operated on for excision of a carcinoma of the stomach. He was examined by a surgeon and his assistant. After operation an interne located some lymphnodes over the right clavicle. The left supraclavicular space above had been examined. Right sided supraclavicular lymphnode enlargement is not seen in 1 out of 400 cases. Death from metastasis occurred very soon.

A few years ago I took a trip through the Northwest, and visited a number of the smaller hospitals. I saw one man remove a sarcoma of the kidney in a child. He did the work admirably, but it was beyond the limits of operability, for there is not one single case on record where the diagnosis is not questioned, in which such a tumor in a child has been removed, without almost immediate recurrence in the other kidney. It matters not how much surgical technic is improved; in sarcoma of the kidney, we will always be face to face with the limit of operability, unless we get other aids than surgery to take care of the metastasis.

The fact of the matter is: there are more surgical limitations in malignancy than one would think when we read the glimmering

statistics of surgical success. Take for instance the very familiar cancer of the lip. In an article in a British Medical Journal, it is shown that in a series of cases reaching over a period of twenty-five years, in the cases in which no lymph involvement was found at the time of operation fifty-two per cent died a cancer death. If there was any metastasis, seventy-six per cent died of cancer. This is a cancer that is often diagnosed by the layman before coming to the physician and its meaning is understood.

These figures point very plainly to one thing which seems to be a fact: namely, that metastasis takes place much earlier than we are apt to think. We don't know the time. No man has yet seen when and how a wild epithelial cell gets into the lymph-stream. But we know this: it is often early in the game. And metastatic formations is one thing that makes a limit in operability. These formations are very frequently not seen, simply for the reason that we do not look.

Metastasis takes place early in many cases. Fenger showed that supra-clavicular lymphnode enlargement, occurred early in five per cent of stomach cancers. But before reaching this region, the cancer cell must pass through five lymph-filters. Cancer cells have even been found in the fat outside the lymphnode.⁵

About ten per cent of all cases of suspected cancer of the upper abdomen, can be placed in the in-operable class by examining the rectum for evidences of transplantation, metastasis, and the supra-clavicular region for enlarged lymphnodes.

It is our duty to establish this ten per cent of inoperable cases without an exploration that carries with it a mortality of about two per cent.

Dudley Palmer⁴ showed that in 435 consecutive cases of carcinoma of the upper abdomen, more than ten per cent were hopeless, without exploration, by examining the supra-clavicular lymphnodes, and examining for pelvic transplantation deposits. 7.2 per cent of the stomach carcinomata had this latter sign. And pelvic metastasis, he says, warrants a most unfavorable prognosis as regards life expectancy.

According to Dr. Golden, Dr. Murphy had at one time four patients in the hospital who had carcinoma in the bones, secondary to carcinoma of the breast. Two of these patients came to the hospital because they had trouble in the bones. One had been diagnosed rheumatism of the hip. A skiagraph showed carcinoma in the femur. A small nodule of carcinoma was found in her breast. The patient was unaware of any trouble with the breast. One similar case came for sciatica. A small carcinoma was found in her breast. Metastasis was found in the femur. Both these cases died a cancer death. One case coming in for cancer of the breast, in a few days developed a lumbago. She died of cancer with metastasis in the spine.

We err in this work, not by not knowing, but, by not looking. We make our mistakes by not applying the A B C of diagnosis.

No case of abdominal carcinoma should be operated on without an x-ray examination.⁶ By this means a certain per cent of tumors high up under the ribs can be placed in the inoperable class. Neither should such a patient be operated on without a rectal examination, or without examining all the lymph glands possible of involvement.

In surgery too we should be careful that we are not operating on the secondary tumor instead of the primary one. How many carcinomas of the ovary do you suppose have been removed with the assurance that all cancer was probably out: In Keen's Surgery Vol. VI, page 132, Bland Sutton makes this statement: continued observation convinces me, that primary cancer of the ovary, using the term cancer to signify a malignant epithelial tumor, has not been demonstrated. Personally I have never seen a case of carcinoma of the small intestine, unless it was located at one of the ducts, that I considered primary.

The truth probably is, that just the same as on the surface, we have cancer commonly develop, but in certain few locations, so have we cancer internally develop as a rule, but in very few places. And here lies for awhile at least some hope in surgery. We know where the places are, and in many we can operate in the pre-cancerous stage. Or we can be on the lookout for it, and really get it in its beginning. And if surgeons can lower the mortality, or really get results, they will get patients for the pre-cancerous operation, or for the early operation, which will be the best we can do until such a time, that we shall really know what cancer is.

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Discussion.

W. W. Pearson: In looking over the literature upon the subject of cancer one secures a good many different views. What appears to me to give the greatest hope that eventually something may be secured in the way of a solution of this problem is the fact that a number of malignant conditions have been demonstrated by men whom we recognize to be most capable have later disappeared without operation or without any medication. Something has happened that has led to the revolutionary process, and it has eventually cleared up. There is one such case here in the city that I have in mind, and a number of such cases have been diagnosed and reported from different sections of the country.

I am very much pleased with one point which I believe the doctor had in mind and wished to impress upon the members of the profession, and that is to regard carefully the limits of the operative cases. The comparison which he made certainly has produced an impression on all of us. If the operator would carefully select his cases where the patients

had a chance, rather than operate on every case that comes along, the community would benefit by it. A case that really has a chance would approach the operation in a better state of mind, and the statistics that would after a time appear would convince us that there is really a certain class of cases in which a large percentage recover following careful operative procedure.

I often think of the article that I read perhaps ten years since, reported at Breslau, I believe, in which a large series of cases were reported. It had to do with cancer of the uterus and a very few recoveries resulted; and in analyzing the cases that had been operated and the patient had lived a great many years, it was found that the diagnosis had been made as the result of routine examination from scrapings, etc., that had revealed the presence of the cancer long before any symptom had indicated or even suggested a condition of this kind. In other words, it was only the routine examination that led to the diagnosis, rather than the patient applying for relief from some malignant condition that apparently was present of which the patient was aware.

I have been very much impressed with the paper. It is a subject I think we should always have in mind.

O. J. Fay: This is an interesting paper but it contains a great many things to which I shall have to take exception; not that I believe for a minute that there is not limit to operability, but I am under the impression that a considerable number of people would be relieved by operation in cases where the ordinary rules of the game, as we understand them, would seem to preclude the possibility of radical cure.

Within the last two years I have gone over the statistics published by many of the large clinics on the final results of operation for cancer, especially cancer of the cervix. Schauta and Wertheim, as you know, claim an enormous recovery—some 18 per cent alive and free from recurrence five years after operation. If you will carefully study Wertheim's case reports you will find that in many cases the uterus was immovable. I am fully aware that many of the reports, particularly those on cancer, coming from surgical clinics are not final reports, but Wertheim has followed up his cases for a period of five years—where he was unable to trace them in other ways he had the police look them up in order that the reports might be complete. Within the past few days, however, Doctor Fairchild has told me that in Vienna some question is being raised as to the accuracy of the Wertheim reports. Many of you know that Emil Ries of Chicago claims an even larger percentage of cures, and to exclude all those cases upon which Dr. Rosenblatt thinks it inadvisable to operate would be to exclude a considerable number of these cases. It seems to me that in the later stages of carcinoma of the stomach, the breast, or of any other organ, operative procedure is the same humane duty as in the early stages when the chances for recovery are good. Take, for instance, a sloughing carcinoma of the breast, in which the stench is sufficient to drive everybody from the room and to make the life of the patient miserable. The removal of the breast will bring relief although a radical cure is impossible.

Not more than four or five years ago Gaylord told us in this room that it was his opinion then (and I have no reason to believe that he has changed it) that a certain immunity against cancer was developed in the individual, and that if a sufficient number of the carcinoma cells could be removed, the immunity would sometimes be sufficient to overcome those remaining. I do not know how true this is but I do know of a case of Dr. Conkling's, shown in the Drake University clinic a few years ago, in which a diagnosis of carcinoma of the stomach had been made by Dr. Bierring. An exploration was done and the diagnosis of inoperable carcinoma apparently confirmed. Dr. Conkling told me that a month ago a robust, stronglooking man came into his office to have an injured finger dressed; the Doctor failed to recognize his erst-while carcinoma patient and the man had to introduce himself. Nine out of every ten of the men listening to this will naturally raise the question of mistaken diagnosis and we are perfectly willing to admit that such a mistake is possible. I do not know whether this man was benefited by the exploratory operation but the history shows that he had been failing rapidly up to that time.

I also believe and maintain that in large sloughing cancers of the stomach where a radical cure cannot be promised or expected, operation will give the patient and those about him a larger degree of comfort;

this is also true of cancer elsewhere. By the removal of an external cancer or one of the digestive or genital tract, a recurrence in the liver or in the closed thoracic cavity, may make death more merciful than it would otherwise be.

So while I have enjoyed Dr. Rosenblatt's paper very much, and while I believe that there are cases which should not be operated upon, I still believe that we have not yet gone far enough to be able to lay down any hard and fast rule. Only this week I saw an exploratory operation upon a man who until May had been a perfectly well man. The diagnosis of carcinoma of the stomach was made early and immediate operation advised, but until a week ago when he and his family came to the conclusion that there had been a possible mistake in diagnosis, operation had been refused. Then no argument would deter him from having the abdomen opened, and day before yesterday we did the exploratory operation and found the liver involved. This only goes to show that the responsibility is not always left to the doctor.

Dr. Rosenblatt: I did not oppose the palliative operation in any way. But it must be understood by the people that it is palliative only. I opposed the ultra-radical operations that are done for the purpose of giving a patient a mere chance. I am opposed to radical operations, done for the purpose of cure in cases where a more careful preliminary examination would have shown the patient to be in the in-operable class. Of course I think Dr. Fay will see that his Drake University case is beside the point; that was not carcinoma, so we need not discuss that.

So far as the Wertheim is concerned, I think the point is fairly well settled, that if any operation has been exaggerated as to the results it is the Wertheim operation. If the Wertheim is to do any good, it must be done early. Wertheim statistics have been thrashed out over in Europe, as well as any thing can be, and so far as I know, the general opinion is, that the operation has been found wanting in too advanced cases. That is the reason why men like Döderlein of Munich, one of the early champions of the Wertheim operation, are now so enthusiastic over radium. I do not know whether radium will do any good or not but I will say that they are holding that out the same as I am holding out this idea of not operating in too severe cases, with too much promise until such a time as we shall really know what cancer is.

Now in the cases where it is thought more merciful to perform the operation, because it saves the patient suffering and discomfort, as in his breast case, more good can be done, or as much anyway by cauterization. We know that cauterization will cause fibrous tissue formations, which will render a cancer more of the nature of a scirrhous cancer. There is no question but what there has been too much exaggeration in reports of the results of operation in malignancy.

THE PRESENT STATUS OF MENTAL HYGIENE AND MENTAL CONTROL*

M. N. VOLDENG, M. D., Cherokee.

Within the last decade mental disease has excited unusual interest. It has commanded the greatest attention, not only of physicians in general, but of all men of scientific bend. The former views regarding the nature of mental disorder have recently been greatly changed. Today the great attention accorded mental cases has given rise to new and improved methods of mental control. Physicians of experience have long since observed the necessity of the best methods of management. The drift of public opinion is now rapidly moving in this direction. One of the advances in this connection is the establishment of a psychopathic hospital. Such an institution has as its function the scientific classification and management of cases afflicted with mental derangement, including all the modern methods of treatment, not applying to those requiring only custodial care. That general hospitals from the beginning of a sepsis have made great achievements and contributed much to modern medicine is known to everyone. The great and rapid advances contributed by the psychopathic hospital, or psychopathic institute, or whatever name may be applied to such an institution, are of comparatively recent date and are known to a relatively small number of people. Very little has been accomplished beyond a decade or so ago. The conception of a psychopathic hospital as understood here is quite general and admits a wide and varied range of activity as observed in connection with private sanatoria, as independent public establishments for borderland and neurotic cases, as an especial department of a state insane institution or as an adjunct to a general hospital. This subject is not altogether new, neither are its merits unknown to those interested in mental anomalies. The psychopathic hospital is no fad; no unheard of institution recently introduced to the scientific world. As a matter of fact this conception had its inception in general hospitals at a very early date in both Europe and America. In Paris as early as 1660 separate wards were provided for observation of mental cases. The Philadelphia Hospital in 1735, the Pennsylvania Hospital in 1752 and the New York Hospital in 1791 admitted cases of insanity. Later separate wards were provided for the mentally deranged. This project was advocated in England in 1861. In 1890 the general hospital at Glasgow opened a ward for the observation and treatment of incipient mental cases. At the present time there are many general hospitals in both Europe and America providing wards for nervous and mental cases. Across the water we see in the London Hospital, St. Thomas Hospital and the Edin-

*Read before the Austin Flint-Cedar Valley Medical Society.

burgh Dispensary clinics for the observation of mental diseases. Also such clinics are in connection with the West Riding Asylum. Psychopathic clinics have been established in Germany and in many of our states in connection with both private and public institutions, general hospitals and state hospitals for the insane. As illustrations of psychopathic departments being connected with general hospitals, mention may be made of Bellevue Hospital, Roosevelt Hospital, hospitals connected with Cornell university, New York university and Johns Hopkins university, also Michigan university. Many other institutions have made arrangements for psychopathic departments. A large number of state institutions have well equipped psychopathic hospitals which are separate from the chronic wards and custodial departments.

From the brief history given, one can readily see that the psychopathic hospital concept has been a matter of gradual development until today we have perfectly organized psychopathic institutions which are indispensable and whose functions are varied, numerous and individual. The psychopathic hospital has come to remain as one of the most potent factors contributed to modern medicine, establishing a land mark as a great achievement in the study, management and treatment of mental disease, as well as instituting prophylactic measures with the view of preventing the development of mental disorder. While the psychopathic hospital in some form and in a general way has been in use many years, yet its establishment as a separate entity for observation and treatment of incipient or acute psychoses is rather recent. The tendency to separate mental cases requiring special study and individual attention from those requiring custodial management is becoming quite general in connection with state institutions as well as in many others, both public and private. Many men with wide experience in the management of the insane are now strongly of the opinion that such arrangements are necessarily conducive of the best results. Heretofore when less thought was accorded this matter the unusual attention which incipient cases demanded was primarily undertaken by general hospitals. Even this procedure is still encouraged in certain localities where it has many adherents and where the psychopathic hospitals under state management are inaccessible. With the recent advances made in psychiatry the psychopathic departments everywhere are being brought into intimate contact with incipient cases and others requiring special and individual attention.

There are evident reasons for not permitting the association of incipient cases with those that have gone beyond the stage of recovery owing partly to the fact that the former class almost invariably tends to imitate, consciously or unconsciously, pernicious habits and practices of those not requiring any special treatment. Moreover, the monotonous life and apathetic attitude incident to

dementia may be deleterious to those recent cases who have difficulty in making adjustments. Again the special training and re-education now so commonly employed in reconstructing the dissociated personality become less feasible in the event that no proper provision is instituted for psychic management, thus abrogating the close contact there should exist between physician and patients and limiting the almost indispensable individual treatment so essential in the greatest attainment in psychiatry and so characteristic of the psychopathic hospital.

The psychopathic hospital, whether connected with private sanatoria, general hospitals, dispensary service or medical colleges, should be under the control of state institutions or the management of the same. Not infrequently we hear of psychopathic hospitals whose function is mainly for observation purposes, having no connection with hospitals for the insane. In this event there may be a possible tendency in attaching undue importance to examinations at the expense of treatment. In other words great care must be exercised in order that therapeutics receives its share of attention. It is not altogether inconceivable that detention in these hospitals may be unduly prolonged. To avoid any possible irregularity of this kind these institutions should be in close touch with state hospitals with which they should coöperate. This, however, should in no way weaken the prerogative of the director who is wholly responsible for the patient's mental control. As a prerequisite for complete success the tactful and directive power must emanate from a single source.

It is needless to say that those intrusted with the management or who are brought into contact with the patients whose self-responsibility is temporarily relinquished should under all circumstances maintain a uniformity of attitude, realizing the fact that these unfortunates are dependent. Their sphere of activity is limited. They are dependent upon the willingness and kindness of others for the solution of their problems, the allaying of their fears and the individual aid in making the manifold adjustments, whereby harmony and uniformity should prevail in the interest of the patient who is so often supersensitive and hypercritical. Hence the nurse should be specially trained in the matter of self control, in the nature of the mental derangement, and in tactful management so essential to mental control. Such tact and alertness to deal with the various situations that may arise consequent to the progressive mental changes have a great bearing upon the individual feelings and ideas. It must not be forgotten that a nurse in charge of a psychopathic ward, however well trained, should not remain on the same service too long. Even the most thoroughly equipped one with considerable experience becomes exhausted in time from continued stress. Hence her work becomes monotonous and uninteresting. The capacity for meeting the manifold perplexities com-

mon to acute cases is greatly reduced. Her patience and cheerfulness are unfavorably influenced by fatigue. Her usual power of encouragement and persuasion so essential to the management of mental cases is enfeebled. A change is now imperative. Nurses engaged in the management of recoverable and incipient cases must be supervised and instructed by those who, by training and experience, thoroughly understand their work. These features are really essential. Moreover, those attendants or nurses who have devoted considerable time to custodial patients during early training rarely become competent in the matter of controlling incipient cases. The custodial treatment applied to all cases is rapidly passing into disuse and the modern trend is the establishment of psychopathic hospitals wherever feasible and practicable, giving encouragement to individual attention, making use of the most modern methods of treatment and attaining results that could not be approached by previous methods.

Within the past few years considerable attention has been given to the psychopathic hospital, not only as being an adjunct to other hospitals, but as indispensable in the satisfactory management of mental cases. As mentioned above, many general hospitals have psychopathic departments which possess the great advantage of bringing cases under observation in the incipient stages, insuring immediate and careful supervision at the very onset of their maladies. Prompt medical attention and suitable advice may be the means of preventing the development of a grave psychosis or of repressing influences as would eventually tend to prolong the disorder or confirm its incurability. The importance and value of early supervision has only recently been duly appreciated. All observation hospitals, all institutions with psychopathic departments are replete with instances where early and proper control resulted in speedy recovery of various mental diseases. The prompt response to immediate supervision and treatment of alcoholic cases is apparent to everyone. Such investigators in the line of mental disorders as Freud, Meyer, Hoch and many others have indicated in their work the thought that many cases of morbid mentality are preventable. Frequently a psychosis is preventable in those of poor hereditary endowment subject to mal-adjustments during ordinary periods of stress if properly controlled during the formative periods of life. Today, where the influence of the psychopathic hospital is felt, there is a growing tendency for very early observation and supervision of all cases. This is a very fertile field for research, not only for psychology but for psychiatry, thus becoming one of the most potent factors in the domain of preventive medicine. Herein lies the opportunity to develop and cultivate the normal powers of the mind, which later will materially aid in making adjustments.

The value of early treatment is emphasized by statistics compiled by Dr. May. During the years of 1909 and 1910 in New York

state 54 per cent of those admitted were in the hospital less than six months, 79 per cent resided less than one year, 35 per cent less than three years and 2 per cent less than five years. 50 per cent of recovered cases were deranged less than one month, 70 per cent less than three months and 83 per cent less than six months. No doubt the psychopathic hospitals connected with the various institutions, both state and general, contribute largely to such glowing results, and their influence which is becoming quite general has perhaps done more than any other one factor in replacing the asylum concept so abhorrent to the general public by the modern hospital idea and educational thoughts. Consequently voluntary commitment has recently become rather popular, hence the very incipient morbid mental changes come under immediate control. In this way the doubtful cases and many others requiring only temporary supervision may ever avoid the embarrassment of legal commitment, making complete recovery after a brief hospital residence. Again many individuals subject to a recurrence of their previous malady are generally familiar with the initial symptoms, hence will in a large number of cases avail themselves of this opportunity for immediate medical attention, frequently preventing a real psychosis. In this connection the thought may be expressed that psychopathic departments may be influential agents in the education of the public and the diffusion of knowledge essential to mental hygiene.

One of the most efficacious methods of treating certain classes is the use of hydrotherapy in its various forms now extensively employed in every modern and well equipped psychopathic hospital. These forms consist of sprays; packs, both hot and cold; douches, especially spinal, and baths, continuous and otherwise. This method frequently improves the general condition as well as effecting the mental state. The spinal douche is indicated in spinal hyperesthesia. The continuous bath frequently beneficial in depressed agitation is the most valuable means possessed for allaying extreme excitement without forcibly restricting the movement. This tends to reduce the blood pressure and hyperesthesia. It is well known that under excitement all mental representations in consciousness are exaggerated with motor reaction as an outward manifestation. The warm continuous bath tranquilizes and tends to distribute the sensory impressions, thus rendering innocuous the psychomotor activity. This is the best means we possess today for combating insomnia. Hydrotherapy has recently to a large extent substituted the drug hypnotics and many sedatives.

No one should be permitted to conduct any method of hydrotherapy without specific training and adequate experience. The danger signals here are protean and imperceptible to the untrained. Individuals are effected differently according to mental individuality and cardiovascular changes. Hydrotherapeutic measures are

neither employed extensively nor very efficaciously outside of psychopathic departments for evident reasons.

One of the recent achievements in psychiatry is the therapeutic application of employment to mental cases. This means is now systematically applied and constitutes a great advance in the line of mental therapy, substituting largely the rest treatment once in vogue. The investigations now carried on in psychopathic hospitals suggest that possibly the rest method was considerably abused, having been unduly prolonged in various cases without sufficient indications. Except for the initial phase of the psychosis the modern reconstruction method favors judicious employment. Idleness fosters introspection, inertia, feeling of insufficiency and lends encouragement to delusions, fixing the attention on morbid sensations. The work treatment may be instituted quite early in the affliction, dependent upon the reactions and attempts at readjustments. This method should not be employed without a consideration for the patient's mental content. It affords better results in connection with other methods of psychic reconstruction as will make apparent the effect upon the mind. This has a tendency of establishing normal mental habits and the tranquilizing effect of directing the surplus energy into useful channels. Many recent investigations in this line show that productive work is of much greater value than that whose utility is not evident. Work given merely to keep the patient busy is not conducive of the best results. This soon becomes monotonous and artificial. Constructive work not to the point of fatigue, however, becomes interesting, develops voluntary attention and tends to reconstruct the dissociated personality. This therapeutic instruction in the two kinds of occupation—artificial and productive—is very essential. At the present time there is a tendency to introduce into psychopathic departments a superabundance of artificial work, such as embroidery, basketry, the making of trinkets, artificial flowers and other things whose intrinsic value is not appreciated by the average insane individual. These invoke little attention, consequently the thoughts wander, permitting reveries and day dreaming. This is especially so in the case of women whose range of associations is comparatively limited.

It should not be understood that occupation is to be applied to all cases, not by any means. There are cases who will require considerable rest and a great deal of good nursing, not only for their mental disease but on account of the physical ailments with which many are afflicted. The hospital idea should be thoroughly emphasized even though there is little evidence of physical or somatic disease. If a patient appreciates the thought that his mental trouble constitutes an illness, nursing, rest and quietude will be more effective. We must always keep in the foreground the idea or duty

of promoting comfort of patients and of allaying their fears and discontent.

Another feature made popular by the psychopathic wards is the judicious and systematic application of massage and other forms of passive exercise, electrotherapeutic measures for selected cases. While these methods are limited in their utility in neurotic and psychotic cases, their application indiscriminately and unsystematically no longer prevails.

Perhaps some of the most valuable contributions of the psychopathic hospital, or made feasible by such an institution, consist in psychic investigations and studies in psychology. Recently considerable consideration has been attached to psychic reconstruction, psychotherapy and psycho-analysis. By these methods are made obvious the origin of the various symptoms, thereby securing the patient's coöperation in explaining the nature of symptoms, as well as teaching him to endure the fatigue peculiar to normal life. The psychic treatment promotes self-control and gives insight as to his mental state, facilitating adjustments. In the matter of readjustments and psychic reconstruction due significance must be attached to the feelings and ideas. During certain phases of the psychosis arguments or explanations put forth with a view of correcting false impressions should not be made obvious as to intensify the feelings or make the patient rebellious or antagonistic to instruction or guidance. Caution must be observed that persistent attempts are not directed towards arguing one out of his delusions when they are insistent. This is a common mistake of those not trained in psychotherapy. It must not be forgotten that a delusion attains its weight and impetus from feeling rather than from reasoning. Any intensity given to feeling makes the morbid idea more persistent. Our criterion here as to action is the certainty or doubt of the patient relative to his delusions. Where this is absolute our course must be insidious to obtain coöperation before an appeal is made to reasoning one out of his delusion. The personality of the individual must be analyzed. Minute details must be gradually and cautiously approached, especially in depression.

One of the various interesting procedures in mental investigations the psycho-analytic method of Freud finds great favor in the evolution of the various psychoses. Here the patient relates past emotional experiences, bringing into consciousness repressed complexes, the basis of his morbid tendencies. These affective displacements become resolved when traced to the original source, becoming diffused, consequently failing in intensity and giving rise to definite mental changes. The essential thought here is that consciousness can manage more effectively painful mental products in the conscious state than when repressed, thus harmonizing them with other psychic processes, utilizing the misdirected energy and

reestablishing the dissociated personality. Freud contends this to be the central object of psycho-analysis.

While many mental researches are being given considerable attention in certain hospitals, yet the whole process is only in an evolutionary stage. However, the horizon of mental analysis and psycho therapeutics is being gradually extended, especially as applied to certain forms of morbid mental changes. Psycho-analysis which is now commanding great attention and which can not be successfully conducted outside of psychopathic wards has aided materially in our understanding of normal mental operations, a complete knowledge of which is indispensable in properly interpreting the various morbid phenomena, according to Freud and Jung. Recently the old views of insanity have been greatly changed not only as to treatment but relative to classification and psychopathology. For example, the maniac depressive group has largely absorbed mania and melancholia. Our conceptions as to the nature of paranoia, dementia praecox and psychasthenia are being studied with renewed interest. Considerable significance is now being attached to prophylaxis in mental disease. Those individuals subject to morbid changes from heredity or some exogenic influence are afforded proper early medical attention and advised to seek lower cultural levels where they can make adjustments.

THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

EDITORIAL

As the end of the year approaches, the Secretary of the Iowa State Medical Society desires, through the agency of its Journal, to request that as far as possible, the 1914 dues be collected after the plan followed in the collection of the 1913 dues. That is, where ever possible, collect the dues for 1914 during the month of December 1913, and send them to the State Secretary as soon as possible.

To the disappointment of the officary of the Society, the special assessment of \$1.00 per member ordered collected with the 1913 dues was found to only temporarily relieve the stringency in the Medico-Legal fund. So the House of Delegates, at the 1913 session, increased the dues to \$4.00 per year. It is the hope of the officers of the society, that the great amount of litigation in which the members of the Society are involved may become lessened soon, but while there are as many damage suits against the members as there have been for a year or two it will be necessary to collect \$4.00 per member.

The Clinical Congress of Surgeons of North America.

The fourth Clinical Congress of Surgeons of North America closed its work Nov. 16th and was altogether a great success. The registration exceeded 4000, probably 1000 more than was expected. All the United States and Canada was represented, with a considerable sprinkling from Great Britain and the Continent. So much interest was shown by our English friends that an invitation was extended and accepted to hold the next Congress in London. Of course it was quite impossible for this vast number to witness the work to the satisfaction of all, and some were no doubt disappointed, but it must be said to the credit of the Committee of Arrangements that there was little real cause for complaint. The hotel accommodations and service were good; the clinical work well selected and of high order. The evening lectures were given by famous men whom we delight to honor. The addresses were carefully prepared, each man apparently appreciating the fact that he had a highly critical audience and that nothing short of his very best would save his reputation. Many messages were brought of advance thinking. On Tuesday evening Dr. John B. Deaver read a paper on hemorrhage of the stomach which was equally interesting to the physician and surgeon. This paper was followed by a paper from Mr. Herbert Patterson of London on some interesting physiological considerations in relation to ulcers of the stomach, and very successfully showed from his point of view that the anterior method of gastro-

enterostomy is to be preferred to the posterior short loop. From Mr. Patterson's showing it would seem that the subject could be gone over again with profit.

One of the advantages of these great meetings is the bringing together of men who are interested in the same work, and the association of men having the same interests, in a most democratic way is inspiring both to the man of large experience and great learning and to the more obscure practitioner. Unhappy indeed would be the lot of the man who brought great airs of superiority. He would surely return home a wiser if not happier man. In the hotel lobbies and at the ampitheater it would be difficult to say who were the great leaders of medical thought and who were the followers. The general air of culture and refinement gave one a feeling of pride which was alloyed only by the thought that so many were following the methods of the commercial classes. So far as we could see no one was boasting of his success in these special methods of securing patients.

The American College of Surgery.

The First Convocation of this much talked of new Medical Organization, was held in the Gold Room, Congress Hotel, Chicago, Nov. 13th.

The meeting Tuesday, Nov. 11th, had cleared the atmosphere considerably and a better understanding of the plan of organization had been reached, so that at the convocation a fair understanding existed of the nature of the membership. The purpose of this organization as we understand it, is to bring together workers in the surgical field who have a common interest in maintaining high standards, and of eliminating certain commercial methods which if continued, bids fair to bring permanent discredit on the medical profession. It must be apparent to any fair minded surgeon that an organization having these purposes in view should be made up of tried men against whom no serious criticism could be uttered. Undoubtedly mistakes have been made in selecting the names for the first list of Fellows, but that was inevitable. Those who failed of election will of course be the most willing critics, but it would be well for those to reflect upon the situation and by a process of self examination covering two subjects. First, if they have had sufficient training to qualify themselves for the work, whether or not they have had only an ordinary undergraduate course supplemented perhaps by twelve to eighteen months hospital internship, and let them say if this is enough training to take up the responsibility of an independent surgical practice; and second, if they have or are practicing some form of fee division. If they can successfully pass this introspection, then they may reasonably complain at being overlooked. We apprehend that a very large part of the criticism will be wide of the mark. We feel justified in saying that both

the state and general committees would have been delighted to have made the list of Fellows much larger if they had felt it safe to do so. We are quite willing to admit that a percentage of the Fellows admitted have been governed by purely selfish motives and care much less about the real interests of the profession than about their own. If this organization succeeds as its founders hope, and Fellowship becomes valuable, a constantly increasing number including many who failed of election, will in the future qualify for the responsibilities and honors of Fellowship. It is absolutely wrong to say that the purposes of the American College of Surgeons is to create an aristocracy in surgery (unless right doing is a badge of aristocracy), but rather as a help in correcting a condition in the profession which we trust every right minded practitioner deplores.

The College had the good fortune to select Prof. Finney as president, and a committee made up of men of high character.

The Convocation was a marked success and must have conveyed the idea of an earnest determination to make the undertaking a success.

The Fellowship Address by Sir Rickman Godless, President of the Royal College of Surgeons of England, and the Address by the President of the American College, Prof. J. M. T. Finney, were very impressive. What President Finney said should be read by every practitioner of medicine. The man who fails to see something in it worth considering is not of the right kind to practice medicine.

Changes in the Faculty of the State University.

The resignation of Dr. Jepson as Professor of Surgery raises the question in the minds of the profession of the state as to the policy of the Board of Education touching the Medical Department. As the information comes to us the demands of Dr. Jepson were not at all unreasonable. We are entirely in sympathy with the idea that the head of the Department of Surgery should control the surgical side of the University hospital. It is admitted that the exercise of this control should be reasonable and should not bar his associates from a fair participation in the rights and privileges of the hospital for their clinics.

The election of a Professor of Surgery will be watched with considerable interest. We cannot but feel that the medical school is in a very precarious condition and a mistake on the part of the Board at this time may prove fatal to the Department. It should not be forgotten that there is a strong sentiment against continuing the full medical course at the University, and if a man of very high order of acquirements is not elected to the chair of Surgery, the sentiment of opposition will change to open hostility. The suspicion is very strong in the minds of the profession that a more or less systemized fee division is practiced by members of the faculty, and that the University is a most potent demoralizing influence rather

than an uplifting influence in the profession of Iowa. We are among those who will like to join in placing our own University Medical School on a level with similar institutions in surrounding states, and for this reason we are anxiously waiting the action of the Board of Education.

Infections Following Surgical Operations.

Dr. E. H. Beckman in an article published in the *Annals of Surgery* for May 1913 on "Complications Following Surgical Operations" presents some interesting observations on infections following operations in a series of 5835 cases for the year 1912 at the Mayo Clinic. There were 111 infections or a percentage of 0.019. The greatest number of infections was in operations on the intestinal tract. There were 1769 such operations with 72 infections or a little more than 0.4 of one per cent. Dr. Beckman is of the opinion that all patients may be considered as carrying infection in their bodies and that the trauma of the operation may be sufficient to lower the resistance of the tissues to the point of germ development. The infection is often attributed without sufficient reason to the suture material used. This suggests a technic which involves the least possible violence to the structures operated upon.

Traumatic Hernia.

There has been and is now so much uncertainty in the minds of doctors as to what constitutes a traumatic hernia and there is such an activity in the matter of claims that we print some views collected by Dr. Wm. B. Coley of New York, and published in *Progressive Medicine* for June, 1913 pages 50 and 51.

"Zollinger states that true traumatic hernia, i. e., such that have developed in all parts as a result of a trauma, are exceedingly rare. Gortz believes that the proportion is not more than 1 in 10,000; Blazius found it 1 in 1,000. Zollinger discusses the generally accepted signs of a true traumatic hernia, and states that the absence of a hernia at an examination just prior to the accident which is usually considered definite proof of the traumatic origin of a hernia, does not, with absolute certainty, preclude the possibility of the existence of the hernia previous to the accident, as a very small hernia may escape the notice even of an experienced examiner."

"A traumatic hernia must cause such pain as to force the patient to quit work immediately and call in a physician. The hernia must be small and free from adhesions and very sensitive, the external ring very narrow; and reduction very difficult and painful. In addition to these signs, there are the visible traces of an injury. In many cases, the positive diagnosis can be made only upon operation."

"I, (Coley) agree with Zollinger, that true traumatic hernia,

such that develop in all parts as the result of a trauma, are exceedingly rare. I believe that they occur only as the result of a sudden blow in the region of the inguinal canal by some sharp object, e. g., the horn of a bull, or falling upon a picket, causing severe and easily recognized laceration of the structures of the canal."

"The only other type of traumatic hernia would be that due to greatly increased abdominal pressure caused by falling against some object, or some heavy object falling with violence upon the abdomen. It is, perhaps, to be questioned whether or not a hernia can be produced by any single increase in intra-abdominal pressure. Personally, I agree with Graser in von Bergmann's Text-book of Surgery, who states that a hernia in all its parts can never be the result of a single increase in intra-abdominal pressure, no matter how great. This is practically the opinion of McCready, the great English authority on hernia. This is a fact not appreciated by the laity, and it has apparently never been heard of by the legal profession representing the plaintiff. The idea that hernia is a disease, and not an accident, is slowly but steadily gaining ground."

Malpractice Suit—Sponge Case.

Recently in Baltimore a suit was won against Dr. Hunner, a professor in a medical school and attached to several hospitals. The case, as we gather from a paper kindly sent us by Dr. Golden, was after a surgical operation done as "a labor of love by Dr. Hunner. He presented no bill for his services and received no remuneration for them." It seems that a very small piece of gauze—not larger than a lady's thimble—was left in a wound after an operation for a "calculous kidney that had long been tuberculous." It was charged that this delayed the recovery and caused tuberculosis of the lungs. It was shown that the operator was in no way responsible for the drain being overlooked, which was the fault of the hospital interne. Of course the tuberculosis of the lung had existed before the operation. But the jury decided the doctor must pay \$1,000 for his charitable work.—(The West Virginia Medical Journal, April 1913.)

Medical Profession in Germany Overcrowded.

The medical profession in Germany is so over crowded that the Prussian Medical Chambers have been requested by the Chamber of Breslau to warn students not to enter the profession. From 1885 to 1910 the population of Germany increased by 34 per cent., while the number of medical men increased by 106 per cent. The workmen's insurance laws makes it compulsory for a large percentage of the population to become members of sick clubs, whereby they receive medical attention in case of illness. This, with the increasing number of hospitals, naturally has resulted in a diminishing number of private patients.

Liability to Occupation Tax after Exemption.

(State ex rel. Wilson vs. City of Pensacola (Fla.), 61 So. r. 193.)

The Supreme Court of Florida affirms a judgment in favor of the city in this action brought by the state attorney for the first judicial circuit to test the power of the city to impose a revenue license tax on the physicians and surgeons practicing their profession within the corporate limits of the city. The court holds that the city of Pensacola may impose an occupation tax on physicians and surgeons practicing their professions within that municipality. And, more generally, it held that an act exempting physicians and surgeons from an occupation tax may be repealed by a subsequent legislature in a general license law. The failure of the legislature to tax, for state purposes, an occupation exempted by a previous legislature from taxation does not prohibit taxation by municipalities, authorized by the later act to tax for municipal purposes all occupations not mentioned therein.

Medical Service For Railway System.

Application has been filed in the Circuit Court at St. Louis for a pro-forma decree of incorporation for the Missouri Kansas, and Texas Employees Hospital Association. The purpose of this association is to provide medical and surgical services for employes of this system and to establish hospitals along its lines with headquarters at St. Louis.

MEDICINE IN IOWA PRIOR TO 1876

D. S. FAIRCHILD, M. D.

Tama County.

An epidemic of typhoid fever occurred in Tama County in the fall of 1868. There were about fifty cases, of which six proved fatal in the population of 1500. A large fall of rain occurred this year saturating the ground, flooding the low lands and filling the cellars.

An epidemic of intermittent fever occurred in the fall of 1872, extending back twelve miles from the Iowa river upon the highlands, attacking almost every family alike without reference to location or acclimatization. The summer was very wet and the autumn very hot.

The effect of cultivation of the soil on diseases seems to be that diseases which originate from malarial poisons are probably diminished while diseases having origin in poisons which have the power of reproducing themselves in the system are increased as typhoid fever and erysipelas.

The practicing physicians of Tama County number 23 of which 9 have diplomas and 14 have no diplomas.

Classification: Regulars, 13; Eclectics, 8; Homeopaths, 2; (1876.)

Surgery.

There have been three amputations made in this county (1876), two of the leg and one of the thigh. The amputation through the thigh was made by J. C. Rogers, M. D., formerly of Toledo, Tama County. One the amputations of the leg was made by Samuel Thompson, M. D. Toledo, and Dr. Mansfield, Cedar Rapids. The other amputation of the leg at the junction of the middle with the lower third was made by Wm. Corns M. D., Tama City. All these cases recovered.

Warren County.

The Warren County Medical Association was organized in July 1869 with seven members. Present membership 14, (1876). Meetings quarterly.

Among the pioneer physicians may be mentioned the name of Dr. M. A. Dashielle of Hartford, Iowa, State Senator to 15th and 16th General Assembly, Dr. C. B. Lake, Indianola, Surgeon 7th Iowa Vol. Inf., Dr. C. W. Davis, Indianola, Surgeon 34th Iowa Vol. Inf., Dr. J. D. McCleary, Indianola, Ass't. Surgeon, 34th Iowa Vol. Inf.

Intermittent and remittent fevers were quite prevalent in the early settlement of the county, but for several years these diseases have not existed to any considerable extent except along the valleys of the three large streams that traverse the country from west to east.

An epidemic of cerebro-spinal meningitis prevailed in the north-eastern portions of the county during the winter of 1872-73.

Puerperal fever prevailed as an epidemic in the northern portion of this county in the winter and spring of 1873.

The influence of the cultivation of the soil upon disease has been to greatly diminish the number of cases of intermittent fever.

The number of practicing physicians is 38, of which 26 are regulars, 14 have diplomas and 12 have no diplomas.

Wapello County. (1876).

Wapello County as a part of the territory of Iowa, was opened for settlement in 1843. For some years it remained but thinly populated. The prevailing diseases were intermittent and typhomalarial fevers, acute pulmonary and intestinal affections, with occasional epidemics of measles, scarlet fever, and erysipelas.

A well organized medical society has been maintained with regular monthly meetings for seven years past, embracing in its membership nearly all the regular physicians of the county.

Pioneer Physicians.

The physicians of the first decade were Dr. C. C. Warden, Dr. J. C. Ware now of Fairfield, Dr. Comstock, and some others of less note. Dr. Warden remains a citizen of this county to the present time. (1876) After twelve years of extensive practice of medicine and surgery in which he was always true to his profession and

personal honor Dr. Warden gave up his profession and engaged in merchandizing. His strong common sense, extensive acquirements, large experience in business affairs, his public spirit, and ample means have placed him at the head of the men of influence in Wapello County. At the present time he is one of the trustees of the Iowa State Agricultural College.

The leading physicians of the second decade were Dr. A. D. Wood whose death occurred in 1863, Dr. W. L. Orr who for the four years just past was mayor of the city of Ottumwa, Drs. S. B. Thrall, T. J. Douglas, J. C. Hensey, J. Williamson, A. R. Weir of Agency City, and A. C. Olney of Chillicothe.

In 1847 occurred a severe and fatal epidemic of erysipelas and puerperal fever. At a later period in 1871-72 occurred another epidemic of puerperal fever with accompanying cases of scarlet fever.

The population of Wapello County is 22,261. The number of educated practicing physicians in this county is 25. Of these, two are homeopaths and one is eclectic; the remainder regular; also one female practitioner, a graduate of Woman's Medical College at Philadelphia.

The surgical operations of which mention might be made are: Ovariectomy in 1872 by J. Williamson. Recovery.

Vesico-vaginal fistula in 1874 by J. Williamson, Successful.

Ovariectomy in 1873 by J. C. Hensey. Death.

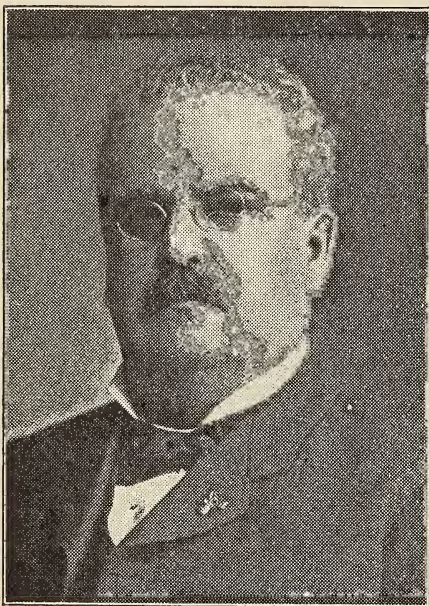
In the allotment of Providence it was reserved for Ottumwa, the county seat of Wapello County, to be the location of what is known throughout the country as Paul Caster's Infirmary. It was started in 1858 by one Paul Caster and has remained under his management ever since with such hired assistants as have been found necessary. (He is fifty years old, corpulent, coarse and uncouth in his physique, without education or knowledge of the world gained by travel, and with a defective articulation, rendering it difficult for a stranger to understand his speech but with a fair share of natural sense and shrewdness.) This man publicly gave out that to him was communicated the divine apostolic gift of healing the sick by the "laying on of hands" and rubbing of the affected parts. This claim of supernatural power has lately been added a claim to the so-called magnetic forces. Thus equipped, this infirmary which was started eight years ago without money or influential friends, has become the resort of invalids from all parts of our common country. The capacity of the infirmary is 100 rooms with accommodations for at least 150 patients. The net profit of rubbing for the year 1895 is reported at \$16,000. The receipts arising from the hotel department are not included in these figures.

J. Williamson.

DOCTOR IRA K. GARDNER.

Dr. Ira K. Gardner died at his home in New Hampton Tuesday, Nov. 4th, after an illness of only two days, from apoplexy.

Dr. Ira Kilbourne Gardner was born Feb. 8th, 1846 at London, Ontario, Canada. In 1865 he came with his parents to Chickasaw county, Iowa, graduated from the Michigan State Normal School in 1866. After graduation he served one year as principal of the New Hampton schools.



He then began the study of medicine with Dr. H. N. Mixer of New Hampton, and in 1870 was graduated from the Medical Department of the University of Michigan, after which he began the practice of medicine in Lawler, and finally removed to New Hampton in 1877, where he was engaged in uninterrupted practice up to the time of his death. For twelve years Dr. Gardner was a member and president of the Board of Education.

In 1871 he married Miss Maggie Gardner of St. Clair, Mich., who with a daughter, Miss Nellie E. Gardner, survive him.

Dr. Gardner became a member of the Iowa State Medical Society in 1897. During this time he served on numerous committees, and has been a vice president of the Society, and was at the time of his death

chairman of the Board of Councilors. Dr. Gardner has been especially active in railway surgical associations, having at one time been vice-president of the National association. For many years he was local surgeon for the C. M. & St. P. Ry.

Dr. Gardner was one of the best known medical men in the state of Iowa, and for many years has been recognized as a leader in the councils of the profession of the state, and was highly respected because of his firmness in standing for what was right and for the sound judgement he exercised in all matters coming before him. Probably there was no medical man in the state whose opinions were worth more to the association, than Dr. Gardner's. These qualities made him not only a respected citizen of his community but gave him high standing among the people as a safe and sound practitioner.

Dr. Gardner attended the meeting of the American Association of Railway Surgeons Oct. 15th, 16th and 17th, and appeared to be in the best of health, and no one suspected what was coming so soon.

Not only will Dr. Gardner's death be a loss to the profession of the state, but will be looked upon as a personal loss. He truly occupied a place that is difficult to fill.

Journal Iowa State Medical Society,
Washington, Iowa.

Waverly, Iowa, Dec. 1, 1913.

The following resolutions were adopted by the Cedar Valley-Austin Flint Medical Society, at their last meeting in Ft. Dodge, November 25th, 1913.

Whereas—Death has removed from our membership since our last meeting, Drs. Ira K. Gardner, T. J. Symington and Carl Hobson. The following resolutions to be spread upon the minutes and a copy sent the immediate relatives of the deceased, and published in the Journal of the Iowa State Medical Society.

Resolved—That in the passing of Dr. Ira K. Gardner of New Hampton, the society has lost Ian McClaren's personification of Dr. McClure. A delightful, lovable friend, a skillful, loyal physician, a just and wise counsellor.

Resolved—That in the death of Dr. T. J. Symington, of Ackley, we lost one of our charter members and one of the first Presidents. We loved honored and revered him for his high professional ideals and practices.

Resolved—That in taking away of Dr. Carl Hobson of Hampton, son of our beloved ex-president, Dr. A. J. Hobson, we lost one of our most promising young members. Though of few years he had acquired eminence in professional attainments, seldom reached by men of more mature years, we sincerely regret his early demise cutting short the life of one so full of promise.

Committee: W. A. ROHLF,
M. J. KENEFICK,
PAUL GARDNER.

BOOK REVIEWS.

Diseases of the Stomach, including Dietetic and Medical, by George Roe Lockwood, M. D., Professor of Clinical Medicine in the Columbia University: Attending Physician to Bellevue Hospital, New York. Illustrated with 126 engravings and 15 plates. Lee & Febiger. Philadelphia and New York.

The author in the first chapter on acute affections of the stomach, says that while acute catarrhal gastritis is not an uncommon disease, still the number coming under the care of the physician are relatively small; that a considerable proportion of cases of alleged acute stomach inflammation are properly some affection of other organs, as appendicitis, gall bladder infection, or gastric ulcer. This fact we have noticed many times, and it is pertinent for Dr. Lockwood to call attention to this rather common error in the beginning of his book. To be helpful in this matter the author has drawn particular attention to means of avoiding the mistake.

Considerable space is given to the discussion of different forms of chronic gastritis which is admitted to be a much less common disease than was formerly supposed, and it is no doubt true that many cases diagnosed as chronic gastritis are really cases of gastric or duodenal ulcer. Two hundred pages are given to ulcer and cancer of the stomach and reviews very carefully the latest information on the subject. In the treatment of ulcers of the stomach, the author makes little mention of the use of drugs, and depends almost entirely on rest and diet. The dietary is somewhat elaborate and needs rather close study. Lockwood divides the responsibility of treatment between internist and surgeon very justly as it seems to us.

In relation to cancer of the stomach, an exhaustive study of the methods of diagnosis is made. This is the important point for as surgery is the only treatment it must be resorted to very early if any good is to come from it. Pyloric stenosis is fully presented in a logical and scientific manner and a full measure of the advantages of radiographic study offered.

In relation to gastroptosis, the author has very little to say in favor

of surgical treatment. He is strongly in favor of treating these cases medically, a position with which we are in full sympathy.

The chapter on acute dilatation of the stomach is full of valuable information.

There are other conditions of the stomach which space will not permit us to consider.

This is a most attractive book, the manner of presenting the subject is pleasing, the style is clear and easily followed, and the mechanical work leaves nothing to criticize.

Gonorrhea in Women. Its Pathology, Symptomatology, Diagnosis and Treatment; Together with a Review of the Rare Varieties of the Disease which Occur in Men, Women and Children. By Charles C. Norris, M. D., Instructor in Gynecology, University of Pennsylvania. Assistant Gynecologist to the Hospital of the University of Pennsylvania; Physician to the Maternity Hospital, Philadelphia. With an Introduction by John G. Clark, M. D., Professor of Gynecology, University of Pennsylvania; Gynecologist-in-Chief to the Hospital of the University of Pennsylvania. Wm. B. Sanders Company. Philadelphia and London. Cloth \$6.00 net. Half Morocco \$7.50 net.

This is a remarkable book and we are sure will be read with great interest. At this time when the medical and sociological side of gonorrhea in women is so prominently before the public, a work of this kind is particularly opportune as an authoritative pronouncement on the subject. The book begins with a historic review of gonorrhea. Then comes a chapter on the bacteriology of the gonococcus; followed by a consideration of the pathologic changes produced by the gonococcus which are so well known to the profession and so unhappy in its results. Two chapters are devoted to sociology and prostitution. This brings the subject up through its historic pathologic and sociologic development to prophylaxis. 182 pages are exhausted. Now comes the practical management of the individual case of the disease; the examination of the patient; the diagnosis and treatment of the disease as it invades different structures, arranged in a most logical order which makes the work so helpful to the practitioner, even if the facts presented are well known to the profession, the writing is so concise and clear. With page 366 begins the serious, dangerous, and distressing complications which are frequently so unfortunate in their results.

Gonorrhea in Pregnancy, Labor and the Puerperium. This condition is so frequent as to invite our closest attention and the greatest care to prevent abortion and eradication of the disease before the termination of pregnancy. If the gonorrhea is not cured before the termination of pregnancy, the danger of puerperal infection is very considerable, and if infection does occur, gentle care should be observed to see that the uterus is emptied. No curettage should be employed, and as soon as the child's head is born, the Credé method treatment should be applied to the infant's eyes.

A chapter is given to gonorrhea in the extreme of life: also a chapter on non-genital gonorrhea.

Not very long ago gonorrhea was regarded as a purely local disease, but recent investigations have pretty well established the fact that we may have to deal with a gonorrheal septicemia, bacteremia and toxemia. This branch of the subject is treated in a chapter showing the serious constitutional complications which may develop in connection with gonorrhea.

This book is full of interest and will no doubt secure many readers.

Stammering and Cognate Defects of Speech, 2 Volumes, Price \$5.00, by C. S. Bluemel, Boulder, Colorado. Published by G. E. Stechert & Co., 151-155 W. 25th St., New York City.

The control and remedying of stammering and speech defects is a neglected field by the medical profession. The great numbers of sufferers from this misfortune are left, in the main, to the care of the charlatan.

These two handy volumes will certainly prove of great value to the physician who attempts the care of the stammerer.

The theoretical discussions of the causality and psychology of stammering is presented in the first volume.

The author begins his work by reasoning out from some twelve well-known facts concerning the stammerer's inability to control his vocal apparatus.

Volume one goes in detail into the mental types (special sense-mindedness); the verbal image; brain, relation between mental imagery and voluntary speech; impairment of brain center (aphasia); stammering; mental confusion; and corollaries.

The speech defects are considered in this work in the mental aspect—that is psychology. We have found this a very readable book, going into a sufficient detail and with a wealth of illustrative material.

Volume two deals in extenso with contemporaneous systems of treating stammering, their possibilities and limitations.

It is made plain that the stammerer must be carefully and faithfully taught to have complete control over his respiratory apparatus.

A very valuable contribution to the knowledge of the care of the all-too-common defects of speech.

Anatomy, Descriptive and Applied. By Henry Gray, F. R. S. Fellow of the Royal College of Surgeons: Lecturer of Anatomy at St. George's Hospital Medical School, London. A New American Edition Thoroughly Revised and Re-Edited with the Ordinary Terminology, Followed by the Basle Anatomical Nomenclature in Latin. By Edward Anthony Spitzka, M. D. Director of the Daniel Baugh Institute of Anatomy and Professor of General Anatomy in the Jefferson Medical College, Philadelphia. Illustrated with 1,125 engravings. Lea & Febiger, Philadelphia and New York, 1913. Price—Cloth \$6.00 net. Leather \$7.00 net.

Gray's Anatomy has for over 50 years been the best known work in all medical literature. This magnificent book is so well known that an extended review seems hardly necessary; so many thousands of students have learned their anatomy from it. We have in our possession an early edition of this great work which may be used for comparison, and note the extension to meet the growing requirements of the student in anatomy. This new edition marks the standardizing of medical training in almost all the colleges in the United States. It is contended that in the near future anatomy will everywhere be taught according to the Basle Anatomical Nomenclature. The B. N. A. terms are introduced in parenthesis following the ordinary terminology. The revision has been very thorough and the whole work brought abreast the latest knowledge of anatomy.

Essentials of Prescription Writing. By Cary Eggleston, M. D. Instructor in Pharmacology, Cornell University Medical College, New York City. 32 mo. of 115 pages. W. B. Saunders Company, 1913. Philadelphia and London. Price, Cloth \$1.00 net.

Physicians have so fallen into the habit of prescribing tablets and

fluids prepared after certain formula by medical houses, that men who would like to do better have almost forgotten how to write prescriptions. This little book will be helpful in restoring the lost knowledge on the part of those who have drifted into rather slovenly habits of prescribing, and it will be particularly helpful to students who should begin at once to prescribe medicine in a scientific manner. Rules are given for the proper terminations in writing latin prescriptions, also the weights and measures of the different systems. About one-half of the book is given to the practical writing of prescriptions, doses of drugs, vehicles, incompatibilites, modes of administration, etc.

Obstetrics for Nurses. By Joseph B. DeLee, M. D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. New (4th) Edition. 12mo of 508 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth \$2.50 net.

As essential as is Dr. DeLee's Obstetrics to the physician, so is this volume to the nurse. The subject matter is divided into many chapters under the headings of anatomy and physiology of the reproductive cycle; conduct of pregnancy, labor and the puerperium. Statistics show that one in two hundred and fifty pregnant women die, that seven per cent of the deaths in women between the ages of twenty and forty years are due to puerperal affection, that one-third of the blindness is due to accidents or carelessness attending birth. It is important that we regard pregnancy and labor as pathological.

Every nurse attempting the care of the pregnant women should have and study this book.

Pediatrics and Orthopedic Surgery by I. A. Abt, M. D., and John Ridlon, M. D., of Chicago, Charles L. Mix, A. M., M. D., General Editor Volume V. of the Practical Medical Series for the year 1913. Ten volumes of the series per year for \$10.00. Price of this volume is \$1.35. Year Book Publishers, 327 South La Salle Street, Chicago.

General Surgery. By John B. Murphy, M. D. Volume II. of the 1913 series of the Practical Medicine Series. Price \$2.00.

General Medicine. By Frank Billings, M. D., and J. H. Salisbury, M. D., of Chicago. Volume I. of the 1913 Series of the Practical Medicine Series. Price \$1.50.

The above three volumes are parts of the series of 1913, under the general editorship of Dr. Mix. They give the essential abstracts of the literature of the previous year. These abstracts are carefully compiled under the direction of the editor for each volume. The series is very handsome set of books for ready reference and should find a place in your library.

Pathology, General and Special. A manual for Students and Practitioners. By John Stenhouse, M. A., B. Sc (Edin.) M. B. (Tor.), formerly demonstrator of Pathology, University of Toronto. Second edition., revised and enlarged; including selected list of State Board Examination Questions. 278 pages, illustrated. Cloth, \$1.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

A very handy, concise book on pathology. Just the thing for quick reference to essential points.

A list of questions following each chapter is a very commendable feature, impressing the selected thoughts. A list of State Board Questions with indicated pages for answers is valuable. An invaluable handbook for students and exceedingly useful for the practitioner to brush up.

Minor and Operative Surgery, Including Bandaging. By Henry R. Wharton, M. D., Professor of Clinical Surgery in the Woman's Medical College, Philadelphia. New (eighth) edition, enlarged and thoroughly revised. .12mo, 700 pages, with 570 illustrations. .Cloth, \$3.00, net. .Lea & Febiger, Philadelphia and New York, 1913.

The fact that Dr. Wharton's Minor Surgery has gone through eight editions attests its value and the esteem in which it is held by the practitioner. Much enlarged over earlier editions. To those who have the previous edition, this book needs no commendation. To those unacquainted with it, we can recommend it as a most necessary addition to the working library. Clear in text, concise in description, amply illustrated, it deals fully with the character of work done by the average practitioner.

THE ALLEGED DECISION AGAINST THE AMERICAN MEDICAL ASSOCIATION.

There have appeared recently in the public press and in a number of medical journals interviews and letters purporting to have emanated from Dr. G. Frank Lydston, in which it is claimed that he had won a very important decision in the Appellate Court against the American Medical Association; that the American Medical Association was, and has been acting illegally for several years; that the trustees are illegally holding office and that all of the acts which have been done by the trustees are illegal. As these statements are untrue, the Board of Trustees, at its meeting Nov. 7, 1913, authorized that the facts be published for the information of those members of the Association who are not familiar with them.

As is well known, for a long time Dr. Lydston has carried on a wordy warfare against the association and its officers. We are informed that for several months prior to January, 1911, he and his attorney endeavored to induce the state's attorney of Cook County to file a petition for a mandamus against the trustees of the association, claiming that they were illegally elected. The state's attorney, after investigating the subject, decided that there was no case against the association and declined to bring the suit. The matter was then taken to the attorney-general of the state of Illinois, who likewise declined to bring the suit.

Jan. 5, 1911, he filed a petition in the Circuit Court of Cook County against the state's attorney of that county praying that the latter be compelled to commence an action of mandamus against the trustees and the association. To this petition the state's attorney filed a demurrer, which in legal effect is making an issue on the petition as filed to the effect that granting all that is stated in the petition to be true, there is yet no cause of action. No proof or evidence of any kind is offered or received on such an issue. A lengthy hearing was had on the demurrer, and the judge sustained the same and dismissed the petition. From that decision an appeal was prayed but was not perfected.

April 28, 1911, a new petition was filed against the state's attorney, which petition was more elaborately drawn than the first one, and again the state's attorney filed a demurrer to the same. Another lengthy hearing was had on this demurrer, and again the judge sustained the demurrer and dismissed the appeal. An appeal was perfected to the Appellate Court, which court consists of three judges sitting as a reviewing court. Arguments were made in that court, and on Oct. 9, 1913, by a divided court, the finding of the judges below was reversed by the opinion of two judges, one judge dissenting. From this decision an appeal has been

prayed by the state's attorney and allowed to the Supreme Court of Illinois, where the cause is now pending.

As will be seen, the decision does not in any way affect the American Medical Association, but relates entirely to the duties of the state's attorney. Should the Supreme Court sustain the decision of the Appellate Court all it would mean would be that the state's attorney would have to bring quowarranto proceedings against the American Medical Association. Then, and not till then, would the American Medical Association be technically concerned, and not until then would the question come up as to the association's method of transacting its business. It will be seen that the statements and inferences contained in the interviews and articles above mentioned, that Dr. Lydston had won a great decision over the American Medical Association, are without foundation in fact.

There has never been the slightest doubt or question on the part of counsel but that every act of the association has been perfectly legal, and in every way in conformity with the statute of the state and decisions of the courts.

Board of Trustees of the American Medical Association,
W. T. COUNCILMAN, Chairman,
M. L. HARRIS, Secretary.

We are pleased to give notice to the following circular of information sent out by the school authorities of Glenwood. The spirit which prompts such public work is commendable.

To Prevent Disease.

Glenwood, Iowa, October 27, 1913.

During the prevalence of scarlet fever or scarlatina in neighboring districts, the Board of Education of Glenwood, at the suggestion of the Health Officer of the city, decided to make the following recommendations to patrons of our schools and urge compliance herewith to prevent an outbreak of dangerous diseases among our children.

All pupils are advised to use a gargle, and spray for the nostrils, cleansing the nose and throat in some way each evening upon going to bed. The gargle must not be neglected, and the spray is strongly recommended. The least expensive gargle and spray for nose and throat is made from Seiler tablets, two tablets to four ounces of water. Also make an amulet from a small pledget, the size of the tip of the small finger, of absorbent cotton, covered with a bit of cotton cloth upon which three drops of oil of eucalyptus is daily dropped. Have the child wear the the amulet on a string around the neck or pin it upon the neckband of the garment. Give careful attention to sore throats. Scarlatina can be carried in the throats and well marked scarlet fever may be contracted therefrom. Of the eruptive diseases scarlet fever is the most dreaded by physicians. It is ruinous to schools as well as to the city's business. Patrons are very earnestly urged and requested to co-operate with the Health Officer and schools in preventing the outbreak and spread of this disease.

Respectfully,

HENRY P. NIELSEN,
Supt. City Schools.

Dr. Wm. H. Rendleman of Davenport, is taking some special work on Internal Medicine and X-Ray Diagnosis in Vienna. The Doctor has been engaged in this since August.

First Annual Report of the Mechano-Therapeutic Institute of the Iowa Methodist Hospital of Des Moines, Iowa.

ARTHUR STEINDLER, M. D., Des Moines, Ia.

In compliance with the urgent need of establishing a place for mechanical treatment in connection and cooperation with the orthopedic work carried on in the hospital, the mechano-therapeutic Institute was opened in the Iowa Methodist Hospital of Des Moines, May 1, 1912. The choice of the equipment had been preceded by a careful study of similar institutions both in the East and abroad, with the view of obtaining the best possible efficiency compatible with the comparatively limited space and with due financial considerations.

At the present time the institute occupies three rooms. They contain the Zander apparatus, the massage tables, equipment for hot air treatment, the Abbott Scoliosis frame, and a number of other mechanical devices. The Zander machines are the main issue of the institution and in their selection combination apparatus' have been given the preference. In this way it was made possible to take care of all joints of the body by means of only three machines. One serves for mobilization of ankle and knee joint, another for the hip joint and a third for the different joints of the upper extremity.

The patients admitted were partly inmates of the hospital, for the larger part, however, out patients, all belonging to the orthopedic service. Treatment was applied daily in some cases, in others 3 times a week.

During this first year of the activity of the department, covering the period from May 1, 1912 until April 30, 1913, there were treated 105 Patients, and 1267 single treatments were applied.

Classified Report:

| Diagnosis. | Cases. Cured and Improved. Not Improved. | | |
|----------------------------------|--|-----------|-----------|
| Chronic inflamm. Rheum. | 1 | 4 | 1 |
| Arthritis deformans | 4 | 2 | 2 |
| Coxa vara | 1 | 1 | |
| Spondylarthritis deformans | 7 | 4 | 3 |
| Rheumatoid Arthritis | 6 | 5 | 1 |
| Gonorrheal Arthritis | 1 | 1 | |
| Traum. Arthritis, A. villosa | 9 | 9 | |
| Arthritis Tb. | 1 | | 1 |
| Sciatic Rheumatism | 3 | 3 | |
| Old fracture deformities | 5 | 3 | 2 |
| Sprains and rupture of ligaments | 4 | 3 | 1 |
| Scar contraction after burns | 1 | | 1 |
| Flat foot, rheumatic, | 4 | 2 | 2 |
| Flat foot, static, | 10 | 10 | |
| Scoliosis | 3 | 2 | 1 |
| Wry neck, | 3 | 2 | 1 |
| Sacroiliac sprain, | 2 | 1 | 1 |
| Congenital Hip Dislocation | 2 | 2 | |
| Dorsum rotundum | 6 | 6 | |
| Paralysis, traumatic, | 2 | 2 | |
| Paralysis, spastic, | 4 | 3 | 1 |
| Paralysis, infantile, | 13 | 12 | 1 |
| Thompsons Myotonia | 1 | | 1 |
| Neuritis | 6 | 4 | 2 |
| Tendosynovitis and Myositis | 2 | 2 | |
| Total | 105 | 83 | 22 |

Of the total of 105 cases 83 were either cured or distinctly improved,

while 22 remained unimproved making a percentage of almost 80 for cases benefited. It must be mentioned, too, that many of the unimproved cases abandoned the treatment at a period too early to draw any conclusion as to the merits of the treatment.

Besides the benefit derived from the institute for joint affections rheumatic or otherwise, the mechanical treatment has been very useful in muscle education and development, especially in our cases of static flat foot and in the cases of infantile paralysis. The former group of cases was given sufficient instruction in massage and flat foot exercises so that it could be directed to continue the work at home and report for occasional inspection. Muscle developing and education in infantile and spastic paralysis has likewise been accompanied by gratifying results. It has especially increased the functional results in the lower extremities and has considerably simplified the question of mechanical supports for the paralysed part, inasmuch as we now get along with much less complicated contrivances.

SOCIETY NOTES.

Dr. J. E. Luckey, chairman of the Section of Medicine for the Sioux City Session, next May, is arranging with Dr. Henry Albert of Iowa City, to show "A Model Laboratory for the General Practitioner," which will surely not be the least attractive feature of the Sioux City meeting.

The Polk County Society met Tuesday, November 25, 1913, at 8:30 p. m., at the Savery Hotel.

Program

Vestibular Nystagmus, C. P. Cook, M. D.

Infant Feeding, M. L. Turner, M. D.

Dr. Cook handled this unusual condition in a very able manner, and it was very entertainingly and illuminatingly discussed by Dr. W. W. Pearson.

Dr. Turner's subject was on a subject more generally familiar to all present and was very generally discussed. Both of these papers with their discussions will appear in a future number of the Journal.

Appanoose County Society met at Drake Library Building Friday, November 28th.

Dr. W. W. Syp, Dr. C. P. Brown, Dr. C. S. James and Dr. E. E. Bamford told in what manner the clinics at Chicago appealed to them most.

Dr. E. E. Heaton presented a paper on "Some of the Interesting Phases of Appendicitis."

The Tri-County Meeting of Monroe, Marion and Mahaska County Societies was held in Oskaloosa, November 19th.

The meeting convened at 11:30 A. M., in the Municipal Building, President E. C. McClure presiding.

Program.

Headaches of Ocular Origin, Dr. W. S. Windle, Oskaloosa.

Some Common Inflammations of the Ear and Their Treatment, Dr. R. R. Snyder, Hocking.

Observation in Chronic Appendicitis, Dr. H. C. Eschbach, Albia.

The Value of Urinary Analysis in Chronic Diseases, Dr. H. M. Eisler, Oskaloosa.

The Clinical Significance of Hypertension, Dr. J. G. Ryan, New Sharon.

Dr. S. W. Clark, of Oskaloosa, demonstrated a rare case of mouth disease.

Dr. C. N. Bos, of Pella, reported an increasing case of Hemorrhagic Nephritis.

The papers were freely discussed and all discussions were "live" and to the point. The program was of unusual excellence and interest and was keenly appreciated and enjoyed by all present.

Dinner was served at 12:30 at Hotel Lacey to about forty doctors and their ladies.

Members present. Knoxville, Parnell, Mulky, Ames, Wright, Harrington; Pella, Achenbrenner and Bos; Albia, Eschbach, Jackson, Jenkins; Melrose, Moran; Hiteman, Worth; Columbia, Bridgman; Covilla, Stafford; Hocking, Snyder; Everist, Reiter; Leighton, Sybengee; New Sharon, Ryan; Bussey, McClure; Oskaloosa, Clark, Childress, Cantonwine, Barnes, Eisler, Gillette, Gerell, Roberts, Rodgers, Spurgin, Traister, B. G. Williams, Wendle, Wilcox.

At the Annual Meeting of the Pottawattamie County Society held at the Library Building at Council Bluffs, on December 2nd, 1913, the following officers for 1914 were elected:

The program for the evening:

President, F. T. Seybert, Council Bluffs; Vice-President, C. F. Baumeister, Ovoca; Secretary and Treasurer, Grant Augustine, Minden, Iowa; Board of Censors, J. H. Cole, F. W. Dean, Council Bluffs and G. A. Spaulding, Avoca; Delegate, H. B. Jennings, Council Bluffs, Alternate, Grant Augustine.

Address by President, Dr. J. M. Barstow.

Accidental Mercurial Poisoning; Report of a Case, Dr. J. H. Cole.

Consideration of Joint Diseases, Dr. A. V. Hennessy and Dr. M. E. O'Keefe.

AMERICAN PROCTOLOGIC SOCIETY.

(Continued from Page 336.)

A Method of Operating on Fistula Without Cutting Muscular Tissue.

ROLLIN H. BARNES, M. D., St. Louis.

This method is used in those cases of fistulae which involve the sphincter muscles. An incision is made external to the sphincter, similar to that made when incising an ischio-rectal abscess. Through this opening the scar tissue is dissected out up to the internal opening. An incision is then made at the skin margin, so that the middle of this incision passes through an imaginary longitudinal line drawn from the internal opening. A submucous dissection is then channeled out up to the internal opening. Gauze drainage is kept in this until the external wound is healed sufficiently. Then the submucous tract, which remains, is incised under local anesthesia. No muscular tissue having been cut, the function of the sphincters is preserved intact.

Report of a Case of Fecal Tumor Associated With Hirschsprung's Disease.

ALOIS B. GRAHAM, A. M., M. D., Indianapolis.

Dr. Graham reported a case of Fecal Tumor associated with Hirschsprung's Disease, the clinical history of which is unique and exceedingly interesting. The patient, a young French woman, aged 27, stated that she had undergone three abdominal operations for Hirschsprung's Disease, or Megacolon.

Present illness dates from birth. Not unusual to go a week or ten days without a stool, and then evacuation was produced only by means of enemata.

At the age of 12, her condition was diagnosed as one of pregnancy on account of the vomiting and the appearance of the abdomen.

At the age of 19, she suffered an attack of complete intestinal obstruction due evidently to fecal tumor. She was operated, and a large fecal tumor was removed from the sigmoid. Six months later, she was operated for post-operative adhesions. No resection of the bowel or short-circuiting operation was performed.

At the age of 25, she suffered an attack of complete intestinal obstruction. She was operated, and a large fecal tumor was removed. Patient stated that the bowel was plicated in closing. Wound healed promptly, but she remained in the hospital for three months purely for clinical purposes.

August 1912, she, for the third time, presented symptoms of complete intestinal obstruction. She had been absolutely constipated for seven days. Abdomen enlarged and everywhere tympanitic except in the lower right quadrant, where there was a dull area corresponding to a large tumor which could be readily palpated. Tumor, a fecal mass, was exceedingly hard and did not pit on pressure. It could be easily moved in every direction throughout the abdomen. Attacks of violent, colicky pains were frequent. Vomiting was persistent, pulse 120, Temp. 101 F. Hydrogen peroxide, introduced into the rectum, had no effect on the tumor, but produced excruciating pains over the entire abdomen. Patient consented to operation with the promise exacted that nothing radical be attempted. She requested that the fecal tumor be removed, but refused to give her consent to any short-circuiting or resection of the bowel.

Median incision. No adhesions. Fecal tumor in sigmoid. Tumor of "stony" hardness. Its greatest circumference was $19\frac{3}{4}$ inches, its weight was 64 ounces. The dilatation which was confined to the sigmoid was very marked, the greatest circumference being 20 inches.

Patient made an uneventful operative recovery, and was discharged from the hospital on the 10th day. She gained in weight and appeared to be in the best of health. She experienced no difficulty in procuring daily evacuations with the aid of small doses of cascara.

December 15th, 1912, was the date of her last visit to the writer's office. At this time she was doing nicely. Inquiries as to her whereabouts were made and the reports were to the effect that she has returned to France. Information was received the later part of April that patient had gone to Chicago from Indianapolis. She evidently suffered another attack of intestinal obstruction. She was operated there April, 1913, and died three days later.

A Further Consideration of Sir Charles Ball's Operation for Internal Hemorrhoids.

ALFRED J. ZOBEL, M. D., San Francisco.

After a trial of this operation the author of the paper sums up his conclusions as to its value, as follows:—That, as a modification of the old ligature operation, it is better than the latter, and at the same time is far superior to the clamp and cautery operation, in that it takes care of and avoids the recurrence of that revoluted anal skin ring which generally becomes markedly edematous immediately after these operations, leaving behind skin tags after the swelling subsides.

In every instance in which the essentials of Ball's technique have been

followed out carefully the author's results have been exceedingly satisfactory.

The operation is recommended.

Deductions Based on an Analysis of 3000 Rectal Cases.

T. CHITTENDEN HILL, M. D., Boston.

The principle object of this tabulation of 3000 consecutive rectal cases was to furnish data as to the relative frequency of the various affections of the rectum and colon. There was a total of 1120 operations performed in this series, and some deductions of a practical nature were drawn from this experience. It was found that rectal ailments were more common among males than females, the ratio being three to two.

Hemorrhoids formed a large proportion, 41 percent of the total. Next in frequency were abscesses and fistulae, 18 percent, and the remaining disorders were tabulated as follows; pruritus ani 8 percent, anal fissure 10 percent, colitis 6 percent, prolapsus ani and procidentia recti 3.7 percent, cancer of the rectum and sigmoid 2 percent, benign growths 1.5 percent, stricture 1.5 percent, syphilis 2 percent, constipation 2.8 percent.

Other miscellaneous conditions were recorded which made up but a fraction of one percent, such as anal verrucae, congenital stenosis, patulous anus, pilonidal sinus, furuncles, foreign body, incontinence, coccygodynia, trauma, sigmoid diverticulitis, etc.

Z-Plastic Operation for Anal Stricture.

WM. M. BEACH, M. D., Pittsburg.

The writer states that extensive cicatrices, resulting from trauma, and involving the partial or entire anal circumference, not infrequently resist the usual methods employed to restore the physiologic function of the anus.

He therefore employed what he terms a Z-plastic method when operating on an anal stricture. The principle underlying the procedure is the transposition of dermic tissue in such manner as to obliterate the crest of the fibrous band.

The first incision is made along the crest of such a band; then incisions are made at right angles from both ends, but running in opposite directions, thus approximating the letter Z. The flaps thus outlined are dissected up, transposed, and sutured. Various modifications, according to the extent of the stricture.

SPHINCTERIC ATROPHY.

Causes, Consequences and Treatment.

Ralph W. Jackson, M. D. Fall River, Mass.

Muscular atrophy about the anus produces more serious consequences than hypertrophy.

The physiology of defecation is studied, and the action of the internal sphincter and of the external sphincter and levators sharply contrasted with their different innervation. This is preparatory to consideration and classification of the causes of sphincteric disuse and consequent degeneration.

Congenital causes are found in imperforate anus and congenital anovaginal cloaca. Coincidental with general weakness cases occur in infants, the aged and the extremely ill. Traumatic causes are faults of proctologic operations and aftercare, or obstetric lacerations, or due to prolonged divulsions by protruding piles or procidentia. Nerve causes are primarily

sympathetic as in rectoral stenosis, or central as in spinal cord lesions.

Degeneration or absence of one sphincter without impairment of the other is considered.

The unhappy consequences of sphincteric inadequacy are presented.

Treatment is preventive or restorative. Neither avails much when due to nerve causes, except possibly in luetic cases. Of first importance is the minimizing of trauma, both obstetric and proctologic, (especially sphincteric incision). Repair of trauma should be immediate and accurate. Later attempts are much more difficult and uncertain on account of atrophic muscular changes, and often results most depend on cicatricial contraction and adaptation of other muscles, especially the levators, to sphincteric duty. Restoration of long overstretched muscles is largely dependent on general treatment.

Sphincteric deficiency is a troublesome problem to every practitioner, and the prognosis is uncertain.

Further Observations on the Surgical Anatomy of the Large Bowel.

GRANVILLE S. HANES, M. D., Louisville, Ky.

Few realize that the capacious portion of the colon is at its cecal extremity. The diameter of the average cecum is estimated at three inches, which is about the same as the rectum, though the cecum and ascending colon have a much greater capacity than the rectum and lower extremity of the sigmoid. The large intestine gradually decreases in size from the cecum to the rectum; the descending colon measuring one and one-half inches, or even less, at its narrowest point. These physical conditions explain in a measure, the locality to which large quantities of fluids are transported when injected into the rectum.

The question of antiperistalsis in the large intestine in man is yet to be settled. It has been suggested that anastalsis may be inferred to exist in the proximal human colon for the reason that rectal enemas have been observed to traverse the entire length of the colon and escape through an artificial opening in the cecum. Also, because surgeons have attempted to stop a fecal-fistula discharge by transplanting the ileum into the transverse colon and sigmoid, but without success. The fact that rectal enemas have been seen to pass through the cecal fistula is, he is confident, little evidence of the operation of an antiperistaltic force.

An ordinary colon tube was introduced two or three inches into the rectum of a dog, and through a funnel inserted into the proximal end of the tube was poured in bismuth-buttermilk, and by the X ray the author observed it traverse the large intestine to the ileo-cecal junction with no sign of antiperistaltic movements. Similar experiments were made on children with corroborating observations. He has seen a pint of bismuth in suspension, when introduced into the rectum of an adult, pass around to the cecum in a few minutes with no evidence of aid by anastalsis.

Under normal conditions peristalsis in the large bowel is a slow process, and it is no more than natural to suppose that anastalsis is also slow in its operation. The brief time, then, required for fluids to pass from the rectum to the cecum compels us to consider the influence of other and more potent agents on the intestinal contents. Two factors are in operation when fluids are conveyed from the rectum to the cecum. The first is the distensible and elastic nature of the intestinal tube; and the second is the hydraulic principle which controls fluids wherever they may be. If fluid is forced rapidly into the rectum that organ will be seen to be widely distended; but this same fluid can be seen to make

its way up the intestinal tube along the path of least resistance. The distended rectum, because of its elastic nature, presses upon the contents till every drop of fluid within its lumen is subjected to an equal pressure. So if additional fluid is forced into the rectum the same will continue to operate.

If the ileum is transplanted into the tranverse colon or sigmoid the watery intestinal contents will be forced by the elastic intestinal tube in the direction of least resistance. The right segment of the colon is the capacious portion of the lower bowel, so if fluids are under greater internal pressure in the lower bowel the fluid contents will travel up the cecum.

The author says, that even if we do admit the existance of anastalsis in normal conditions of the colon, he does not believe it to be an important factor in conveying fluids from the rectum up into the colon.

Hanes had a series of three X-ray pictures made on the same individual to show what actually happens when tubes are introduced into the bowel. The first, shows a thirteen inch proctoscope introduced its entire length. The distal end is one inch above the umbilicus. The second, shows an ordinary colon tube introduced its full length after the removal of the proctoscope. The tube passed along the sigmoid up to the highest point. (one inch above the umbilicus), and then turned upon itself, the distal end passing back into the rectum. The third radiograph shows the bowel injected with bismuth buttermilk, and the thirteen inch sigmoidoscope introduced again. This picture shows that it is impossible to pass any instrument high up in a normal colon, except by the greatest accident. The sigmoid is lifted up into the abdominal cavity; its lower arm is occupied by bismuth and the metal tube; while the upper segment of the sigmoid is seen very distinctly where it has dropped back for a point opposite the umbilicus into the pelvis to its junction with the lower extremity of the colon. He claims the latter radiograph proves that it is impossible to pass a non-flexible instrument beyond the first half of the sigmoid.

To control the overflow of fecal material in colostomies the author has found, in five cases operated since January of this year, that the hard rubber rod can be allowed to remain permanently when used as in the Maydl operation. The opening in the intestine is above the rod. A thin gauze dressing is applied over the bowel, and a strip of gauze **is thrown around the knuckle** of the intestine and overlying gauze is then tied under the supporting rod. The strip of gauze constricts both the upper and lower segments of the bowel, and exerts a most satisfactory control over these artificial openings.

A VISIT TO THE RETREAT

C. A. Boice, M. D.

On July 1, 1905, Dr. Gershom H. Hill, who had been superintendent of the Independence Hospital for the Insane for twenty-eight years, in association with Dr. John C. Doolittle, who had been assistant to Dr. Hill for several years, established The Retreat in Des Moines. The Retreat is residence estate of the late Mr. Callanan. It comprises forty acres of high rolling oak timber land in northwest Des Moines. A fine large house, with the necessary out buildings, was situated on the topmost part of the tract.

The property, together with much of the furnishings, was purchased and a homelike hospital for nervous and mental diseases was opened. Improvements have been made as they were needed, and new buildings opened up until now The Retreat proper consists of six houses and cottages.

All the buildings are heated from a central vapor heating system, electric lighted, good ventilation and unsurpassed grounds drainage.

The property is located on Woodland Avenue, between 28th and 31st Streets.

The Iowa profession soon recognized the existence of this institution for the care of those unfortunates who suffered from mental disturbances and referred appropriate cases to Drs. Hill and Doolittle. From a monthly average of seven patients for the last half of 1905, the population of The Retreat has gradually increased to a monthly average of thirty-four in 1912. By the close of 1913, eleven hundred patients will have been cared for. The average length of stay has been two months.

Dr. Russell Doolittle has lately been added to the staff. He has particular charge of the laboratory work. Dr. Julia Ford Hill has more particular care of the female patients.

The Retreat is exceedingly well located for the purpose for which it is intended. On a high eminence in a quiet part of the city, yet near transportation; isolated from neighboring houses by forty acres of woodland. A large garden—both for flowers and vegetables—is well kept, cows, chickens and hogs are kept on the premises to supply the institutional needs.

The Retreat is conducted as a home rather than a hospital. Patients are isolated or segregated as their maladies demand. Little medicine is given, dependence is put rather in care-free rest, exercise, good diet, hydrotherapy, massage and mental relaxation.

A well equipped hydrotherapy room is maintained. Mrs. Bertha Oxenius has charge of the massage, Swedish movements and gymnastics. She is particularly well equipped for her work. Born and

educated in Sweden, instructed under the most skillful masseurs in Amsterdam and Paris. She spent ten years in various hospitals of the United States before coming to The Retreat. She brings to her patient a mental sympathy far more than the average.

Twenty nurses are in constant employment, as also are twenty other employes.

The cost of treatment—including board and all—is \$125 for the first month, thereafter \$100 per month.

The Retreat is the only private institution in Iowa for the care of mental and nervous diseases, and has been quite liberally patronized by the Iowa physician. The long recognized ability of Dr. Gershom H. Hill has given the institution a well merited standing.

The several buildings allow complete segregation of the various types of neuroses. Nurses are numerous enough to give almost individual care.

There are three kinds of nurses, namely, graduate nurses, practical nurses and educated companions. Male nurses are also in attendance in the building for men. Nurses are chosen in particular for the mental sympathy which they are able to bring to the patient. In suitable weather ambulant patients are kept in the open air—either walking about the estate or driving—always under nurse supervision.

The Retreat is conducted for the purpose of restoring invalids, and since the place is most advantageous to patients who can appreciate their surroundings and are fit to live out of doors much of the time, the cases treated here are carefully selected.

The kinds of nervous ailments which can here be treated to good advantage are of the functional sort and known as insomnia, despondency, hypochondria, hysteria, incipient epilepsy, paralysis agitans, and the mental instability incident to adolescence or to the change of life.

These conditions, in predisposed persons, if neglected, may develop into positive and perhaps permanent mental derangement.

These afflictions are more common than ever before, they develop insidiously, and in some cases are very persistent tending from bad to worse until they become incurable.

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No. 7

THE METHOD OF TONSILLECTOMY BY MEANS OF THE ALVEOLAR EMI- NENCE OF THE MANDIBLE

(SLUDER METHOD.)

WITH A CONSIDERATION OF THE VARIOUSLY MODIFIED
INSTRUMENTS FOR PERFORMING SAME,
AND DEMONSTRATION OF TECH-
NIC AT OPERATION.*

C. ARMIN GUNDELACH, M. D., St. Louis.

At the meeting of the American Medical Association held in Saint Louis, June 9, 1910 in the Section of Oto-Laryngology, Dr. Greenfield Sluder of Saint Louis presented for the consideration of the section members a "Method of Tonsillectomy by Means of the Alveolar Eminence of the Mandible." A little while later S. S. Whillis and F. C. Pybus reported a method of enucleating the tonsils with the guillotine which was apparently developed independent of any knowledge of Dr. Sluder's presentation. They published no consideration of the anatomy concerned in the procedure and reported only 50 per cent perfect results. A report of Dr. Sluder's method, its instrumentarium, and technic of the operation was not published until almost a year after the initial presentation, when it appeared in the Journal of the American Medical Association of March 25, 1911. Since that time the method has gained for itself many advocates and has received such wide publicity, that at first I was inclined to discourage the consideration of the subject of modern tonsil-surgery before this society today, for I felt that the

*Read by invitation at the meeting of the Iowa State Medical Association, Des Moines, Iowa. May 8, 1913.

method had been presented so clearly not only by Dr. Sluder himself on several occasions, but also by Drs. Ballenger, Corwin and Beck.

Dr. Ballenger further illucidated the description of the method by means of some exceptionally good illustrations, which appeared in the third edition of his text-book in 1911. Since that time the method has gained in ever increasing popularity and the instrument used in the execution of the operation has been variously modified.

It is the consideration of these variously modified instruments, together with such a statement which I only recently read in the "Archives Internat. de Laryngologie" by Dr. Marmod** "That with thirty years experience the author declares that infected tonsils can be cured without danger with the cautery," that has lead me to very gladly accept the invitation of your society to visit Des Moines and take advantage of your courtesy in providing operative material. You may therefore pass judgment yourselves upon the advantages of the modified instruments as also on the method itself. I take it that all are agreed that total extirpation of the faucial tonsil (tonsillectomy) is the operation indicated when the tonsils demand surgical interference. As a therapeutic measure this procedure is now becoming universal in adoption notwithstanding an occasional statement as cited above.

In presenting the method in a crystalized form I can do no better than quote verbatim from Dr. Sluder's original article that; "the essential and distinctive feature of this method consists in the fact that it moves the tonsil completely out of its normal bed in the forward and upward direction and then utilizes one of the anatomic markings of the lower jaw as a vantage point in putting it through the aperture of the guillotine. This anatomic marking is the well-defined eminence just above the mylohyoid-line produced by the last formed molar tooth in its socket."

The instrument used to perform the operation is a modification of the old Mackenzie guillotine. The modification consists of a general strengthening of the instrument, accomplished by increasing the thickness of the shaft and handle and strengthening the union between the two. This particular guillotine is now sold under Dr. Sluder's name, though he, himself claims no credit for having originated it, but expressly states that it is a modification of what is called the Mackenzie instrument, for which Mackenzie himself gives credit in his text-book to Dr. Physick, a physician in Philadelphia, a description of who's instrument was published in 1827. In modifying the instrument Dr. Sluder has designed the shaft of such length as to give the greatest amount of leverage. The opening has been made oval and placed transversely to the axis of the shaft. It is important to see that the cutting edge of the blade has been made quite dull, for it will then take its course between the

**Mermod—Archiv Internat. de Laryngologie, Tome XXXII. No. 2-1911.

capsule and the underlying muscle-fibres. If the blade is too sharp instead of taking the path of least resistance, it will occasionally cut through the capsule and so leave a small tag of tonsillar-tissue, or it may pass too deeply on the other side of the capsule and so injure the muscles of the throat. Less bleeding also follows a dull blade. Personally I have seen no alarming hemorrhage in a large series of cases where every variety of tonsil was removed for every conceivable cause. The bleeding occurs practically from all three wounds at once and immediately after withdrawal of the instrument and so appears excessive at times, the fact that it is our custom to operate under nitrous oxide anesthesia which in itself causes a slight venous stasis as also an increase in blood pressure, will probably account for the apparent slight increase in the amount of blood lost. The important factor in the amount of blood lost is to my mind not the method or technic employed in removing the tonsils so much as the rôle played by certain pathological conditions in the patient, either local or general. For this reason it is advisable to take the clotting time of the patient's blood before subjecting him to operation. Anemic, nervous individuals always make a poor operative risk. The average amount of blood lost for both tonsils and adenoids has been found to be 70 cc., the average amount for adenoids alone is 10 cc., that would leave 60 cc., for tonsils alone, 60 cc. equals four tablespoonfuls. Dr. Siegfried Tenzer of Vienna, in a recent letter tells me that they have had no bleeding of consequence in the Polyclinic in Vienna where as we all know the operative material is tremendous. The method of operating is, briefly this:

The head being steadied by the anesthetist or an assistant, the mouth being held open by means of a mouth-gag and the finger having been introduced to determine the size of the alveolar eminence, for the more certain the operator is of the configuration of this hump and the more he depends upon it for his vantage point, the more successful will he be, and further, the angle of the slanting surface just posterior to and below the eminence having been determined, which angle may vary considerably in different jaws but usually is about forty-five degrees, and cognisance of the distance that the tonsil lies prosterior to and inferior to the eminence having been taken, for this relation also varies, sometimes even misleading one if the last molar tooth has not appeared or has been drawn; The operator enters the instrument from the side opposite to the tonsil which is to be removed, i. e. almost transversely across the mouth cavity, preferably using his right hand for the right tonsil and the left hand for the removal of the left tonsil. If the surgeon is not am ambidextrous he removes the right tonsil with the right hand and for the left tonsil stands to the right of the patient directly facing the left tonsil provided the patient is on his back.

The oval ringed opening of the instrument is now placed over

the tonsil, its distal arc is carried outward until it comes in contact with the bone, or if the operation is being done under a local anesthetic, against the firmly contracted internal pterygoid muscle. The tonsil then being firmly held is moved forward and upward to the alveolar eminence, which acting as a vantage point will often suffice in forcing the tonsil completely through the aperture of the instrument. In cases where the eminence is of such size that it does not completely put the tonsil through, the surgeon's finger is placed over the anterior pillar and the remaining portion of the tonsil pressed through the window. The operator having assured himself that he has engaged perfectly the upper and lower poles of the tonsil, he causes the blade of the instrument to descend.

The instrument with the tonsil firmly engaged may now be drawn into the oral cavity which play the soft parts will readily allow, so that the operator may further satisfy himself of having applied it perfectly. Should a small part of the gland not have been put through properly it will be felt as a small lump under the anterior pillar, in fact after some experience with the method the operator is soon able to make this observation by sight alone. The maneuver having been executed properly the blade is forced through, severing the connective tissue between capsule and muscle, and the instrument withdrawn from the patient's mouth. That ends the operative procedure. The whole operative procedure for both tonsils and adenoids can be performed in less than thirty seconds. The method is more devoid of danger than any dissecting or cutting operation ever devised. It is certain well nigh to perfection. It is simple of execution to the point of bewilderment!

Dr. O. T. Freer in a discussion of the method in Chicago last November took a rather determined stand against it, expressing his doubts as to its adaptability; his arguments, however, being theoretical and not based on experience as he himself stated. One very timely statement he does however make and that is. "The demands for a correct tonsillectomy are: to leave no part of the tonsil behind to cause future attacks of tonsillitis or peritonsillar abscess; to cause the least possible reaction; to avoid sepsis and above all injury to the muscles of the palate and to avoid the sacrifice of the plica triangularis." I repeat this statement in full for the Sluder method will fulfill these demands more uniformly than any other method devised to date. The method when employed correctly will leave not a vestige of tonsil behind to cause future attack of tonsillitis or peritonsillar abscesses; it will cause less reaction than any dissecting operation no matter how skilled the manipulations of the operator; it is more certain to avoid sepsis, as the lymphatics are compressed and not spread open as they would be where the tonsils are being pulled at and the spaces cut open by a sharp knife, furthermore in this operation the septic material in the tonsil is being pressed away from the lymphatic stream. The avoi-

dance of all injury to the muscles of the palate is of first importance. In using the guillotine this danger is reduced to its minimum, whereas in the use of the dissecting tonsil-knives the danger of injury to the muscles finds its greatest possibilities. In his original paper Dr. Sluder stated that he purposely removed a part of the anterior pillar. Since the publication of Dr. Sluder's original paper, Dr. Geo. Fetterolf of Philadelphia, has done much to clear up our conception of the anatomy of the tonsil and of the muscles surrounding it. A careful dissection of the anterior pillar will show a delicate fold of mucous membrane extending from the edge of the anterior pillar proper over a small area of the anterior surface of the tonsil to blend with the edge of the capsule. This little bit of mucous membrane called the plica triangularis and designated as a part of the anterior pillar by Dr. Sluder is what he removed. Dr. Freer demands that this little tag of mucous membrane be saved and grafted onto the wound. He being of the opinion that in so doing the original position of the pillars is more readily retained.

The method has yielded over 99 per cent perfect clinical results at the Children's Hospital where it is my good fortune to be associated with Dr. Sluder. Experience has taught that thin, flat tonsils, those that extend high up into the palate, that are soft and squashy in consistency, are most difficult of manipulation, in fact it may be advisable in such cases to be certain of engaging the superior part (pole) first, and removing the lower part by a second setting of the guillotine, which lower part can always be engaged.

It occasionally requires considerable force to press the blade through the connective tissue and it has been this difficulty which has led different men to modify the instrument. First of whom was Dr. W. L. Bellenger, who simply changed the style of the handle, adding the universal handle which acts on the leverage of a short fulcrum. He lately has modified the instrument again, adding an extra blade, so that he now has a dull blade for engaging and fixing the tonsils and a sharp blade which then passes immediately behind the dull blade and cuts the tonsil off.

In my hands Dr. Ballenger's modification has not given the high percentage of perfect results that I have been able to obtain with the original instrument which I attribute to the fact that in holding the instrument it is necessary to flex to the fullest extent the hand on the forearm, which lessens the operator's control over the instrument and sacrifices much of the power of a stiff wrist-joint in its normal position. The handle being the medium through which the power required for carrying the blade home is exerted, that is, the handle opening and closing as one might say, does not allow firm grasping and consequently not the great range of movement that the more simple original model does.

Dr. J. C. Beck using the same principle of Dr. Sluder's technic

of manipulating the tonsil, devised a Pierce-Mueller snare with a very strong Vedder-tip. The snare wire taking the place of the blade of the guillotine. Experience with Dr. Beck's instrument has proven to me that practically all the leverage-power is lost in a straight instrument and while the method of its application is identical with that of the guillotine its method of working is slightly different, in that the wire snare which in this instrument does the cutting, is not rigid after leaving the groove in the Vedder-tip and consequently is not under the surgeon's control. Especially disadvantageous is this, when a last little bit of the tonsil must be tucked through the opening with the index-finger, or when there is a peritonsillar infiltrate, which pathologic condition does not invalidate a perfect operation with the original instrument. For repair work, Dr. Beck himself says, it is not adapted. Better than this, for those wishing to avail themselves of the slowly strangulating snare, to my mind is the suggestion of Dr. Luther C. Hood of Boston, who merely throws a snare over the guillotine and draws it home after having engaged the tonsil with the guillotine. A snare at its best is unreliable, always giving trouble when least expected.

More recently, Dr. Edwards-Schenck of Cincinnati, and Dr. J. Ellis Jennings of Saint Louis, have exhibited instruments calculated to remove the tonsil by this method. Dr. Edwards-Schenck's instrument is practically identical with Dr. Beck's, it having several mechanical refinements. The instrument of Dr. Jennings consists of the French guillotine mounted on a pistol grip. Incidentally the French guillotine is really an American conception as Dr. W. B. Fahnestock of Lancaster, Penn., according to Sir Morell Mackenzie, is said to have designed it and published a description of it in 1832. The objection of both of these instruments, which also holds for Dr. Beck's tonsillectome, is that in cutting on the "pull", they not only take the tonsil away from the bone and so deprive the operator of a fixed object upon which to manipulate his tonsil, but in themselves deprive the operator of the security of a fixed opening, which opening, in the case of the guillotine, is ever decreasing in size as the blade descends.

The simplest of all modifications is probably that of Dr. W. E. Sauer of Saint Louis, who has simply turned the thumb piece of the blade parallel with the handle and added a screw which acts as an *écraseur*. Dr. Sauer's modification resembles and embodies the cardinal features of the original instrument more nearly than any of the rest. He has dulled his blade so that its dissecting edge is a millimeter or a millimeter and a half in thickness which is so thick that occasionally it allows the tonsil to slip from under it, and also occasionally fails to follow the line of cleavage between capsule and muscle, especially where there has been a peritonsillitis. Another disadvantage of too blunt a blade is that it does not lend itself to repair-work as readily as a sharper one.

CONTRACTED Pelves IN OBSTETRICS*

JOSEPH R. CONDON, M. D., Des Moines.

The adult pelvis is the product of the evolution of racial and individual characteristics affecting the fetal pelvis, followed by the growth and moulding of these bones during early life. As De Lee aptly remarks "as much variation is found among female pelves as in female features."

The pelvis at birth presents a rounded inlet, is somewhat funnel shaped; the sacrum is long and straight and the vertebral bodies and promotories do not project within the lumen as they do later. In the development of the adult pelvis the most important factor is the inherent growth of the bones, but the other factors, namely the mechanical influences affecting the growing child is notable especially when disease disturbs the adjustment.

The force of gravity produces two general tendencies of pressure in the pelvis. First, the body or trunk pressure falling in a line somewhat in front of the promontory causes a bending of the sacrum as the lower end is held by the sacro-sciatic ligaments. This body pressure pushing the sacrum forward and downward also puts a strain on the ilio-sacral ligaments drawing the posterior iliac spines together and tending to separate the symphysis, but as this does not occur the result is the symphysis approaches the sacrum, giving the transverse ellipse. This transverse tension, as it is called is counteracted by the second force resulting from gravity, that is the pressure of the heads of the femora in the acetabula, forcing the ilia upward and inward and called lateral pressure. The resultant of these two forces and the growth of the bones determine the shape of the pelvis in general.

Normal pelves may be put in four groups according to the shape of the inlet: the transverse ellipse, the heart shaped or cordate, the round, the antero-posterior ellipse.

Aside from these general variations individual features occur in each pelvis and one writer states that he found barely one perfect pelvis in five thousand.

The anomalies of the bony pelvis that are of interest in obstetrics are the various forms and degrees of construction. In general it may be stated that a diminution of $1\frac{1}{2}$ to 2 cm. in an important diameter, constitutes constriction but clinically every pelvis is considered contracted when it has produced any distocia.

As to a classification of anomalous pelves many have been proposed but usually they are awkward and difficult to keep in mind.

The simplest classification is modeled after Litzman and may be given as follows:

I. Pelves with normal shape. Justo-major and justo-minor.

*Read before the Polk County Medical Society, 1913.

II. Pelves with abnormal shape. a. Flat pelvis, 1. simple, 2. rachitic, 3. generally contracted flat pelvis. b. The transversely contracted pelvis. 1. Kyphotic, 2. funnel, 3. assimilation pelvis, 4. spondylesthetic pelvis. c. Irregularly contracted pelvis. 1. Scoliotic, 2. coxalgic, 3. asymmetric sacrum, naegele pelvis, 4. tubercular hip, dislocation and amputation. d. Crushed together pelvis. Osteomalacia and pseudo-osteomalacia.

Considering these abnormal pelvises in turn we will mention the prominent features of each.

1. The generally contracted pelvis or pelvis justo-minor occurs in four types, the simple equally contracted pelvis occurring in small women being in proportion to the rest of the skeleton, the infantile type associated with hypoplasia of the sexual characteristics generally and the masculine pelvis showing a long narrow sacrum, high pubic arch and a round or even anteroposterior oval inlet.

II. Flat pelvis although classified as simple and rachitic are practically all found to show evidences of rickets. In other words this is a typical rachitic deformity. The flat pelvis is very rarely highly contracted. In severe cases of rickets the bony growth may be so retarded that we get the generally contracted flat pelvis occurring in rachitic dwarfs producing the smallest pelvis known. Or another deformity of rickets is the pseudo-osteomalacic pelvis. However, if the disease is checked early nature has a great tendency to correct these deformities.

III. Transversely contracted pelvis though very rare in high degrees occur quite commonly as moderate anomalies. Moderate transverse contraction is found in the kyphotic, infantile, and high assimilation pelvis being more marked at the outlet in funnel and masculine types. A rare and classical pelvis that named after Robert is a transversely contracted pelvis following bilateral osteo-arthritis of the sacroiliac joints.

The kyphotic pelvis results from any disease of the lumbar vertebrae causing a gibbus during early life, e.g. lumbar Pott's disease, rachitic kyphosis, etc. The deformity is caused by the trunk pressure falling back of the promontory and rotating the sacrum on a horizontal axis diminishing the transverse tension and allowing the lateral pressure of the femoral heads to contract the transverse diameter. In this same connection we may consider the spondylolisthetic pelvis a deformity following fracture of the interarticular processes of a vertebra allowing the body of the vertebra to slide forward over the pelvic inlet. This also throws the trunk pressure behind the promontory in the attempt to stand erect and disturbs the transverse tension beside causing the coccyx to approach the pubis. This of course is a rare case. Funnel pelvis is a self descriptive term applied to quite a large number of pelvises these frequently presenting other anomalies such as general contraction, kyphotic pelvis, oblique contraction or high assimilation. The important feat-

ures of the funnel pelvis are the narrow pubic arch and the convergence of the sacrum and ischial tuberosities. These pelves occur in women of masculine habitus with a tendency to sterility and infantilism of the genitalia.

The last group of pelves showing transverse contraction are the assimilation pelves. The pelvis is developed opposite the 25th to the 29th vertebrae but as an anomaly the ilia may fuse with the 24th vertebra also resulting in a long narrow pelvic canal designated high assimilation pelvis. The assimilation may be higher on one side than the other causing scoliosis.

The low assimilation pelvis generally is shallow and roomy and does not cause any dystocia.

IV. Obliquely contracted pelves. It is well known that perfect symmetry of the pelvis is rare, one diagonal conjugate is always slightly longer than the other but there are quite a number of mechanical disturbances following disease that make this asymmetry very marked.

One thing that makes obliquely contracted pelves easy to recognize is the presence of the deformity or defect above or below the pelvis that caused the asymmetry. The common pelves in this class are the scoliotic among which the scoliosis due to rickets causes the greatest deformity.

Scoliosis following infantile paralysis has become more frequent with the increase of this disease recently.

The coxalgic pelvis an oblique deformity following hip disease of childhood the joint being painful is spared by throwing the weight on the other femur tilting the pelvis up on the diseased side this being accentuated by a crutch sometimes used on the affected side. This flattens the pelvis on the sound side and pushes the pubis toward the diseased side and makes a sharper curve in the linea terminalis of that side.

A rare pelvis showing typical oblique contraction is that named after Naegele who first described it. It is caused by unilateral sacro-iliac osteo-arthritis.

V. Osteo-malacia a rather rare disease results in the crushed-together pelvis in fact the pelvic cavity is often almost obliterated.

It might be well to recall briefly the normal measurements of the adult female pelvis and at the same time to emphasize the importance of careful routine measurements of all pelves at the first visit of the puerpera. As we all know it is only by such pains taking routine that the diagnostic ability is developed. The public should come to know that there is much importance in engaging a competent obstetrician early in every case.

The normal pelvis is supposed to measure between the iliac crests at their widest point 29 cm, between the anterior superior spines 26 cm, between the trochanters 31 cm, the circumference of the pelvis taken midway between the crests and trochanters 90 cm.,

the external conjugate taken from just below the last lumbar spine to the anterior surface of the pelvis 20 cm., and lastly the oblique diameters taken from the posterior superior spines to the anterior superior spines being 22 cm., on the right and 21 1-2 cm., on the left.

It is true these external measurements are only of relative importance but should be taken in every case nevertheless.

The internal measurements are most important and are most easily and accurately made about the beginning of the eighth month.

1. Diagonal conjugate 12 1-2 cm. By deducting 1 1-2 cm., we get the true conjugate or distance from the promontory to the upper posterior surface of the pubis.

2. Between the ischial spines 11 cm.

3. Between the ischial tuberosities 11 cm.

4. From the end of the sacrum to the arcuate ligament beneath the pubis, also 11 cm. The last three requiring an internal pelvimeter aided by the fingers.

Next considering the contracted pelvis in pregnancy and labor, we find sometimes a retroverted uterus imprisoned beneath the overhanging promontory. Later the uterus rises out of the pelvis as it enlarges there being a lack of space and the abdomen is overdistended. This pendulous abdomen together with the deficient uterine contraction seen in these cases usually weakens the muscular powers of labor. When labor is approaching the contracted pelvis shows a great propensity for causing errors of presentation and attitude the breech, face, brow, and shoulder present quite commonly. Prolapse of the cord, arm or foot occur especially in flat pelvis.

Another danger to be kept in mind is early rupture of the membranes followed by increased danger of infection or pressure necrosis. In each case it is important to consider the proportion of the head to the pelvis, the duration of the pregnancy and the plasticity of the head. Even in cases where the disproportion seems hopeless nature may accomplish wonders in molding the head through the pelvis.

The treatment of labor in contracted pelvis presents a very difficult field of practice. There are many things to be considered and they must be considered early. We cannot always depend on the history of a previous labor. Accurate measurements are our best guide.

When it comes to sizing up the fetus we are more in the dark, however, careful observation is in order here also. The intrauterine length is easily taken and even the head can often be measured through the abdominal wall. Some claim to have developed the faculty of giving the approximate weight by balancing every fetus between one hand at the cervix and the other at the fundus.

To classify these cases for treatment we must make some arbitrary grouping so it has been usual to put them in four grades.

1. Absolutely contracted having conjugata vera 5 1-2 cm. in flat and 6 cm. in generally contracted.

2. Relatively contracted conjugata vera 5 1-2 to 7 1-2 cm. in flat and 6 to 8 cm. in generally contracted.

3. Moderately contracted conjugata vera 7 1-2 to 9 cm. in flat and 8 to 9 1-2 cm. in generally contracted.

4. Border line cases having a conjugata vera of 9 to 9 1-2 cm.

I. The treatment of an absolutely contracted pelvis is limited by the fact that no full term fetus can go through the pelvis and it must be treated by another route namely Cesarean section. If the labor has progressed to a stage unfavorable because of the danger of infection the uterus should be extirpated after the child is removed.

II. With the next grade of contraction the relatively contracted the assumption is that a living child cannot be gotten through the pelvis. When these cases are in capable hands from the start the operation of choice is Cesarean section. But occasionally neglected cases having been in labor a long time and with great probability of infection from repeated examination and attempts at instrumental delivery are encountered. These conditions are considered to be the indications for craniotomy on the probably living child, by the consensus of medical opinion. However, the factors in the choice of procedure are the decision of the patient and family and the result of adequate consultation as there are medical men who will not perform craniotomy on the living. In cases where craniotomy has been performed the patient and her family must be warned to have a later pregnancy properly cared for as no one considers a second craniotomy justified on the same woman.

III. Moderately contracted pelves, that is those having a conjugata vera of 7 1-2 to 9 cm. or 8 to 9 1-2 cm. in flat and generally contracted types respectively, give the most trouble in the question of treatment. When cases are seen early we consider induction of premature labor. Many patients think a difficult labor is sufficient excuse for an abortion thereafter but this is all wrong. One difficult labor by no means proves that succeeding labors will be the same. In general labor in these pelves may be spontaneous in 75 per cent of cases. With primiparae it is usually best to wait and see what labor will accomplish on the other hand the induced labor is indicated more often for multipara. In case the head proves too large after premature labor is induced the conditions are still favorable for pubiotomy.

As a means of retarding the growth of the fetus some have proposed a diet for the mother but this does not seem to have the desired effect the fetus having too much the relation of a parasite. Next considering these cases that are allowed to go on to term. The primipara with a conjugata vera around 9 cm. or over and who likely will exhibit strong pains is best treated expectantly. With conditions less favorable and a multipara who has had trouble in labor

before a Cesarean section is best. The premature induction of labor is not altogether a happy procedure the maternal mortality should be nil but the infant mortality stands at 30 per cent or more including those that die in the first few weeks. It is difficult to select the most favorable time for this method; it should be between the thirty second and thirty fourth week. The duration of pregnancy is often rather uncertain but in cases where premature labor is contemplated the fetus should be palpated and sized up as well as possible every two weeks after the sixth month. Then a time corresponding to a menstrual period is chosen when the child is viable and still small enough to pass through the pelvis. In cases treated expectantly there are several things to watch, first to prevent early rupture of the membranes patient on her side and not straining. If the membranes rupture before dilatation is complete a colpeurynter is placed inside the cervix. During the first stage the head should be watched to get a good presentation if it is found to slip off in either ilia fossa the crouching attitude on one knee with the thigh on the side where the head is, up against the abdomen will press it back over the inlet.

In the beginning of the second stage the Walcher position may be tried as it lengthens the conjugata vera but it is painful and therefore cannot be continued for any length of time. Quite commonly it is found easier to get the head into the pelvis with the exaggerated lithotomy position although this would seem to contract the inlet, however, it steadies the head and straightens out the fetus so the forces of labor are more effective.

As to how long the patient may be allowed to labor depends on the progress made and the strength of the pains. If the pains are strong and little progress is made five hours should be the limit on account of danger of pressure necrosis or injury to the child's brain. If spontaneous labor does not occur the alternatives are version and extraction, high forceps, hebosteotomy or craniotomy. Version must be done before the head engages or the lower uterine segment thins out particularly and it is not a good procedure with primiparae. If the head seems to be molded to fit into the pelvis and then the powers weaken the high forceps are used but even then we may fail to deliver and hebosteotomy should be done. We should know in advance if the pelvis is merely flat as in these cases the worst is over when the head is engaged while in generally contracted or funnel pelvis there is not much place for version or forceps, these should have Cesarean section.

Lastly the fourth class, pelvis only slightly contracted practically all can be treated expectantly. Only where the head is large is there difficulty and this puts the case back in the preceding group. In this connection it is well to call attention to contraction of the outlet often unrecognized until the forceps are applied. The outlet should be carefully measured before any application of for-

ceps. To facilitate the passage of the head in a contracted outlet the exaggerated lithotomy position is best.

In conclusion the suggestion is to develop a careful system of examination of puerperal cases, when we find the measurements abnormal the radiograph will facilitate the diagnosis. Systematic measurements of all cases and the ability to recognize disproportion of the fetus to the passages will keep us out of the embarrassing predicaments that arise in this work.

Discussion.

Eli Grimes: I would like to call attention to the rarity in this community of contracted pelvis. I am sure a great many of you have seen cases running up into the hundreds and have never found an abnormal pelvis. In our larger cities, like in New York and Boston, you can see more abnormal pelvises in a week than you will see here in a lifetime. Why this is I do not know.

W. W. Pearson: It may be of interest in a few words to cite a case with which I had some connection. A lady had been pregnant, I believe, several times, having gone the full term. But three children lived. One of them developed into one of the best athletes Iowa has ever produced. In the case of the last one unfortunately after delivering the child it was found that one eye was gone. It was loose in the bed. That was my connection with the case. It happened to be a female child. I have never seen it suggested in any place, but it occurred to me that it would be a nice thing to develop that side of the face along with the other. So I applied a paraffin ball after the orbital tissues had healed sufficiently.

This kept the orbital tissues of the proper form so that at a later time an artificial eye might be employed. The family moved from here to an Eastern town, and an oculist whom I saw not long since told me that the result was very gratifying. I think the child is now perhaps ten years old.

But in the case of the contracted pelvis I can readily understand how difficult it is for a man to make such a mistake. He might mistake that for some other cavity and remove an eye unintentionally.

D. W. Smouse: I have seen only two contracted pelvises in my lifetime.

G. W. Ryan: I have examined a number of cases and measured them in which the measurements were short, but delivery was made at the end of the full term without special difficulty. I remember a case in which a doctor made measurements and said that they were considerably subnormal. The case went through to the full term and was delivered without any lacerations of the mother or injury to the fetus. I have not had any experience in contracted pelvis where Caserian section or anything of that kind had to be done. Dr. Currie before he left Des Moines said he had handled over 2,500 cases, and had only one case of contracted pelvis.

Discussion on the paper of Drs. Walker and Rendleman.

Dr. Condon: There isn't very much to add. Dr. Grimes called attention to the occurrence of contracted pelvis in the large centers. That is generally associated with foreign-born population, and of course in a city of this size we begin to have considerable foreign-born population and it might increase in that connection. It is found that rickets and deformities of this class are more common among these people, and should lead to more care, although it is considered the proper thing to take these measurements in every case. I am not as well acquainted with this community as a large percentage of those here, but a slightly contracted pelvis does not seem to give the trouble that it is expected to give sometimes. Bad cases are generally diagnosed in advance.

THE SIGNIFICANCE OF HEART MURMURS*

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When an obstruction occurs in the lumen of an elastic-wall tube through which liquid is flowing, eddies are formed which set the walls of the tube in vibration and give rise to a palpable thrill accompanying which is a blowing sound called a murmur. It is quite easy to detect this murmur but not so easy to determine its significance which depends entirely upon a correct diagnosis of the lesion producing the murmur and the changes in the heart muscle. There seems to be a great defect in our knowledge of the significance and meaning of cardiac phenomena and particular harm may accrue from its misinterpretation. Of the many heart murmurs which are commonly encountered, some are of serious omen, while others are of no moment at all, and by these I mean the functional heart murmurs which may point to some other pathological condition in the body, yet of themselves are absolutely of no serious significance, and must be so recognized for much unnecessary harm may be done through the belief that the murmur is an indication of a serious heart disease, when they are signs neither of disease nor impairment, and may be present especially in the young and in no way incompatible with the presence of an absolutely normal and healthy heart. This paper will consider in a few case reports some of the common lesions of the heart accompanied by murmurs and in a schematic way give a few rules by which we may arrive at a correct diagnosis in possibly ninety per cent of our heart cases, for a heart murmur is only an aid to the diagnosis which must be made before any significance can be placed upon it. There are four things about a heart murmur we must know before we can make a correct diagnosis:—

First, the time; second, the place; third, the transmission lines; fourth, the quality and character.

There are a number of ways of determining the time of the murmur, but the best is to hold a stethoscope over the apex or base with the finger on the carotid artery. If the murmur is heard at the same time as the pulsation of the artery, it is systolic in time. If not, it is presystolic or di-systolic. The place is at the base or apex and the transmission lines are characteristic, while the quality is a valuable aid, because all murmurs of stenosis are harsh grinding or blubbering while those of an insufficiency are soft or blowing.

Case 1. Patient, housewife, forty-seven years old, had been suffering from lagrippe, but had had no physician. Since recovering from the lagrippe, she had noticed considerable shortness of breath amounting almost to orthopnea, bowels slightly loose, appetite excellent, physical examination of the heart showed the impulse in the sixth interspace, three-fourths of an inch outside the nipple line,

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four inches from the midsternum. Action rapid, ranging from one hundred to one hundred and twenty. Presystolic murmur heard over the apex. Considerable tenderness in the epigastrium and about the navel. Edge of the liver three inches below the costal margin. There was no ascites but both legs showed some soft edema. Urine was pale, 1010 specific gravity with a trace of albumin, amount in twenty-four hours, twenty to thirty ounces. Now believing in the rule that all murmurs heard at the apex are of mitral origin, and that all presystolic murmurs heard at the apex indicate a stenosis, I made a snap shot diagnosis of mitral stenosis, with dilatation but another possibility was to be remembered, that is, that the dilatation itself might cause the murmur, for we know that in any dilatation, affecting the left ventricle, we may have a presystolic murmur at the apex. More history of this case is necessary. Patient commenced menstruation at eleven years of age. At this time she noticed a fullness in the front of her throat which became more prominent at the time of the first child in her twenty-sixth year. It diminished in size after delivery but increased after the next succeeding four pregnancies. Each time remaining a little larger until it now measures sixteen inches in circumference. This case illustrates well the relation of the thyroid gland to pregnancy. From her eleventh to her forty-fifth year, the patient had had no symptoms from the thyroid, only the slight increase in size. Now after the forty-fifth year, came the familiar symptom of hyperthyroidism, loss of weight, despite good appetite, sense of bodily heat, finally tachycardia, tremor and some exophthalmus. There is no way of telling in this case whether or not mitral stenosis is present. So our diagnosis is Graves' disease. The presystolic murmur being a result of the cardiac hypertrophy and dilatation, but not an indication of heart disease.

Case 2. Practice of a colleague. Patient, twenty-eight years old. Since the age of sixteen, has complained of pain in the right upper quadrant, so severe at times that she cannot stand the pressure of her clothes, accompanied with the presence of a lump, which is more prominent on exercise. This has been especially bad for the past three months. The bowels rarely move without medicine. The stools were small, hard and black, poor appetite and never vomits. Has coughed considerable for years but never raised blood. For the past three months has had much dyspnea and palpitation. Urine scant, never bloody. Lost five pounds in the last five months. Patient pale. Hemoglobin seventy-five per cent. A low pitched systolic murmur is heard all over the precordium but not transmitted beyond that area. The heart showed no enlargement. In the epigastrium a violent pulsation is felt, raising the hand three-fourths of an inch at each beat of the heart. Below the margin of the right ribs is a smooth, round tumor or lump about four inches long, can be moved freely in all directions. It is very tender. There are several points about this case that deserve discussion but the point

with us is, has the patient any heart disease? Since the heart is not enlarged and the pulmonic second sound no louder than we would expect it to be, we have only the murmur to suggest a heart lesion. But from a systolic murmur, alone, it is never wise to infer the presence of any disease of the heart, especially where the patient is anemic. It seems reasonable to consider this murmur as hemic or functional. We have no reason to believe that the heart is failing or that the lump in the upper right quadrant has anything to do with it. Diagnosis,—floating kidney, and debility. Outcome, perfect recovery.

Case 3. Patient, unmarried, age twenty. Mother died of tuberculosis, also one sister. Father and two brothers are well. Patient became run down about five years ago and was sent west, apparently for tuberculosis, although her cough was not very persistent, and her sputum was not examined. Four days previous to the time I saw her, my associate had been called and found her unconscious. No convulsions and no paralysis although some rigidity existed during the attack. She has since been in bed and vomited every thing taken by the mouth. Dizziness, palpitation and pain in the epigastrium have been her complaint. On examination the apex beat was found one inch outside of the midclavicular line in the fifth interspace. There was a presystolic thrill heard at the apex, murmur very harsh, transmitted upward and inward. Pulse irregular. Many heart beats fail to reach the wrist. There were fine crackling rales at the base of both lungs, especially on the left side. Blood and urine normal despite the extreme rapidity and irregularity of the heart, there was no cyanosis nor difficult breathing. The essential features in this case are, the tuberculosis family history and the rales in the lungs, and the present condition of the heart. The murmur in this case being long, rough and harsh, heard over the apex and transmitted upward and inward, beginning after the second sound, running up to and terminating in a clear, sharply accented first sound, presystolic in time shows all the evidence of a mitral stenosis. And if a mitral disease exists, we exclude tuberculosis for the two seldom, if ever, exist together.

Murmurs are heard much better below the obstruction than above and are transmitted in the direction of the blood flow. The character of a murmur depends upon the width of the orifice at which it is produced, upon the nature of the walls of the orifice and upon the velocity and tension under which the blood passes through it. The smaller the orifice, the higher the pitch. No sound can be heard over the heart when the flow regurgitates through an absolutely patent mitral orifice. Therefore, we may have a very slight lesion of the heart with a very distinct murmur and a very serious lesion accompanied by no murmur at all. Occasionally murmurs become so loud as to be heard several feet away from the patient or even across the room. Such murmurs are usually systolic in time

and are heard in aortic or mitral stenosis. All these factors both the widening of the leak and the decreased force of the beat explain the fact as the heart weakens under the influence of the lesion, the murmur may actually disappear. In conclusion, allow me to reiterate that to place any significance upon the heart murmur alone, is fallacy, but the heart murmur with other clinical symptoms, will enable us to arrive at a correct diagnosis, hence, enable us to attach a significance to the murmur. The following concerning heart murmurs, have been valuable to me as diagnostic aids.

1. Time of the murmur: systolic, presystolic or diastolic.
2. Place: base or apex.
3. Transmission lines.
4. Quality.

A systolic murmur at the apex indicates an insufficiency.

A systolic murmur at the base indicates a stenosis.

A presystolic murmur at the apex indicates a stenosis.

A presystolic murmur at the base indicates an insufficiency.

All murmurs heard at the apex are mitral.

All murmurs heard at the base relate to aortic troubles.

Lines of transmission.

1. Mitral insufficiency runs up and out.
2. Mitral stenosis runs up and in.
3. Aortic insufficiency, lines run (a) to second right interspace; (b) to fourth left interspace close to the sternum; (c) end of ensiform cartilage.

Aortic stenosis, lines to right clavicle or right carotid.

Quality: all murmurs of a stenosis are harsh, grinding or blubbery. Those of an insufficiency are soft, low or blowing.

HIGH BLOOD PRESSURE*

WM. H. RENDLEMAN, M. D., Davenport.

The routine estimation of blood pressure as a necessary part of a general examination has demonstrated the frequency of hypertension. That this condition is increasing and that it is principally a disease of modern civilization is hardly doubted. As long as the killing pace of our strenuous living continues where wealth, fame and luxury are preferred to a simple life with contentment, hypertension with its train of sequelae, cardio-vascular and renal disease will continue to increase. "Overliving", including over eating, overwork and worry, causes a wear and tear of the cardio-vascular apparatus which if long continued leads to degeneration. Impairment of the circulatory apparatus brought about by long continued mental and physical overwork, dissipation, irregular habits, worry and overeating, induces an increased blood pressure which results

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in degenerative changes in the heart and arteries. This leads to insufficient elimination which adds a toxemic factor. Though temperate in eating and drinking, the business and professional man leading a life of high tension for years without relaxation suddenly finds without warning that he is ready for the scrap heap. To this condition Cornwall has given the term "Functional abuse of the circulatory apparatus." It is generally considered that high blood pressure is the result of the action of some toxin in the blood on the vessel walls or capillaries. The source and nature of this toxin or toxins are less understood. The commonest, probably, are those produced from putrefaction of the proteids in the intestinal canal. Overeating of proteid food containing a high amount of purin bodies, especially if associated with deficient elimination, produces a large amount of toxic substance, which when absorbed acts directly on the vessel walls and also causes degenerative changes in the liver, kidneys, heart and other vital organs. The irritant action upon the vessel wall produces vaso-contriction which after long continuation brings about persistent hypertension and arterial sclerosis. Dale injected a substance, isolated by Beyer from putrid meat, which raised the blood pressure from 110 mm to 260 mm, proving the direct action of putrefactive toxins on the blood pressure. The liver offers greater protection to the organism than any other organ in the body. All toxic substances of the intestinal tract must first pass through the liver where they are neutralized. It is evident, then, that overeating or the ingestion of any substance which increases the amount of these toxins or which causes degeneration of the liver cells, jeopardizes the function of the liver, bringing danger to the body and damage to the liver cells. When the abuse is long continued chronic intoxication exists. Toxins introduced from the outside may raise the blood pressure. These include alcohol, nicotine, lead and caffeine. Alcohol probably does not act directly on the circulatory apparatus but indirectly through damage to the liver, the protecting organ against intestinal toxins. In the toxemia of pregnancy the fault may be that of insufficiency of the kidneys and liver or the production of substances in the fetal and placental metabolism.

The mechanical obstruction in the small arteries and capillaries, produced by arteriosclerosis of the vessels of the kidneys, splanchnic region, brain and heart, brings about hypertension as a compensatory measure to overcome the obstruction, is a theory with some truth, but it is now believed the hypertension in a majority of cases preceeds and causes the arteriosclerotic changes. In either case, no doubt, the hypertension is conservative and protective. However, recently, Lawrence has disputed the theory of Cohnheim, that the high tension is necessary to force enough blood through the contracted arteries and the kidneys for proper elimination. According to Lawrence's experimentation based also on the work of

Fischer the amount of urine does not depend on the pressure but on the quantity of blood passing through the kidneys in any given time. The amount of blood-flow through the kidneys in turn depends according to Fischer on the acidity of the tissue cells, the greater the acidity the more retention of water and the less urine excreted. The acidity of the cells in turn is increased where oxygenation in the tissues is deficient. In cardio-renal diseases with hydremia, oxygenation is deficient. The edema and lessened urinary excretion are the result of the deficient oxygenation, producing increased acidity in the tissues which retain the waste products and prevent elimination. According to Lawrence increased or diminished urinary output may accompany either increased or diminished blood pressure, the output being entirely independent of the blood pressure and dependent on the amount of blood-flow through the kidneys. Hypertension is neither caused by obstruction of the flow in the kidneys nor does it produce increase of urinary output. If this is true, hypertension must be considered merely as a vascular spasm in response to the action of some toxic substance, while the theory of its protective action loses value. Lawrence found that when the systolic, diastolic and pulse pressures approached their normal ratios there was a rise in urinary excretion. These ratios as expressed by Gibson are as follows: the normal relation of diastolic to systolic is as 2 to 3; the normal relation of pulse pressure to systolic is as 1 to 3. These ratios are destroyed when there is hypertension. When by the administration of nitrites the heart output was increased, there was diuresis and an approach to Gibson's normal circulatory coefficient.

Attempts have been made to show that epinephrin is responsible for increased blood pressure. Some stimulus produces either an increase in the epinephrin or renders the vessel walls abnormally sensitive to the action of the normal secretion of the adrenal gland. Schlager presents evidence to show that in hypertension, vessel walls are hypersensitized to epinephrin. Cannon has shown that the adrenal secretion is increased in emotional states. Quadroni and Zimmern have both reduced high blood pressure by exposure of the adrenals to x-rays.

Some have advocated the theory that pressor substances in the kidneys cause high blood pressure, but Pearce failed to find them in extracts of dog kidneys, but did demonstrate depressor substances.

Infections may produce changes in the kidneys and arteries leading to hypertension. Syphilis ranks first among these.

Prolonged and active brain work, continued cerebral stimulation and hard physical labor, as in professional athletes, lead to overstrain of the vessel walls and hypertension.

In the study of hypertension and its allied conditions, heart, artery and renal diseases, it is difficult to tell which is primary and

which secondary. Most are agreed that while hypertension is only a symptom it usually preceeds changes in the heart, arteries and kidneys and has much to do with their production. Osler classifies those cases in which hypertension is prominent into three groups: (1) hyperpiesis, (2) arteriosclerosis with high tension and associated cardio-renal disease, and (3) chronic nephritis with arteriosclerosis, and secondary high blood pressure and heart hypertrophy. In hyperpiesis the blood pressure is elevated without evidence of arterial or renal disease. However, in any given case it is difficult to rule out sclerosis of the splanchnics, or even to be positive that there is no renal disease, as Cabot has shown the frequency of nephritis without urinary findings. Repeated examinations are often necessary to demonstrate a trace of albumin. When simple hypertension is continued for any length of time general arteriosclerosis results, and as a part of the same process the kidney becomes the type of chronic interstitial nephritis and the heart that of chronic myocarditis. Hypertrophy of the left heart is a sequence of the increased work necessary to keep up the blood flow against increased pressure. In the second group, arteriosclerosis with high tension and associated cardiac and renal disease, the most prominent feature is the arteriosclerosis. This, however, may be secondary to the high tension or it may be due to the direct action of toxins on the vessel walls. Hypertension does not necessarily accompany arteriosclerosis. It may be that only the peripheral arteries are sclerosed which will give to the examiner the impression of a generalized sclerosis. When the splanchnics are not sclerotic there is very little rise in pressure. The hard arteries of the aged may not be accompanied by hypertension. In these instances it is to be presumed that the cause acts directly on the vessel wall without first producing hypertension. The blood pressure may be low in late stages where there is a myocardial insufficiency and in conditions of general debility. The kidneys may be normal but usually are sclerotic and the myocardium becomes fibrous from sclerosis of the coronary arteries. Then there is the condition of chronic nephritis with arteriosclerosis, heart hypertrophy and secondary high blood pressure. These patients are younger, less vigorous and give an earlier history of causes leading to the nephritis. Uremia, headaches, pallor and ocular changes are more common in this class.

The dividing line between hypertension and normal blood pressure is arbitrary and varies under different conditions and ages. Faught's rule to determine the normal systolic blood pressure at a given age is to consider 120 as normal for age 20; after which one-half mm is added for each year. Systolic pressure above 145 is to be considered abnormal except in the aged, and should cause suspicion of organic disease. The diastolic pressure averages 30 to 45 lower than the systolic. This difference between the systolic and diastolic pressure is the pulse pressure, and is the force propelling

the blood into the small arteries and capillaries. The diastolic or minimum pressure measures the peripheral resistance. In conditions of hypertension, the diastolic does as a rule rise in proportion to the systolic, which gives a high pulse pressure, and better enables the circulatory apparatus to carry on the circulation. In heart incompetency the systolic falls, approaching the diastolic, consequently the pulse pressure is lessened until finally there is not enough force to overcome the minimum pressure in the aorta.

The velocity of the blood-flow and the pulse pressure are related so that within certain limits the velocity equals pulse pressure times pulse rate. Thus an increased pulse pressure will increase the velocity. Since the amount of blood per unit of time determines the functional capacity of an organ it is essential that the pulse pressure be up to standard.

The symptoms of hypertension are generally those of the underlying or associated conditions such as nephritis or arteriosclerosis. However, there are symptoms referable to the hypertension which attracts the patient's attention and which may be elicited on examination. Such patients may complain of headache, fulness in the head, increased frequency of urination, especially at night, insomnia, restlessness, shortness of breath, cardiac pain on exertion, dizziness, numbness, indigestion and bloating. It may be noticed that the patient is unable to relax from his work. Heart hypertrophy, a result of hypertension is almost always present. Transient hypertension is produced by a sudden demand on the circulation and disappears when the cause ceases. Persistent hypertension of any consequence unassociated with cardio-vascular or renal changes is rarely found. Especially is this true if this state has existed any length of time. It may, however, be difficult to discover such changes clinically. It is not common to find a high blood pressure in both men and women in middle life who are stout and robust. The probabilities are that degeneration in the splanchnic vessels and those of the kidneys has already taken place and is not demonstrable.

As a means of diagnosis Cornwell recommends an anti-putrefactive diet. If with this diet, which consists of restricting the proteids and rest, the blood pressure returns to near the normal, any considerable amount of arteriosclerosis and nephritis can be ruled out. If on the other hand, there is no marked reduction of pressure advanced arterial and kidney changes are probable. Janeway in 100 cases of hypertension diagnosed chronic nephritis in 79 per cent. In Fiessinger's 160 cases of hypertension there were 84 of chronic nephritis, 44 cases of arteriosclerosis and arterial disease. The termination is usually death from uremia, myocardial insufficiency or cerebral hemorrhage.

In pregnancy the occurrence of increased blood pressure is perhaps more important than the presence of albumin. Any reading above 145 should give apprehension of grave toxemia or even

eclampsia. The routine estimation of blood pressure during the last few month of pregnancy is more necessary than examination of the urine. In eclampsia with convulsions the pressure may go very high. After delivery it falls gradually to normal excepting in the fulminating type, where it continues to rise. If there was pre-existing hypertension with nephritis or arteriosclerosis the tension does no better than to return to the level preceeding pregnancy.

The treatment of hypertension consists, first, in prophylaxis; second, in removing as far as possible the underlying cause. The hypertension per se is generally best left alone. Prophylaxis consists in proper living, temperance in eating and drinking, moderation in physical and mental work, avoidance of mental strain and worry, avoidance as far as possible of serious infections, like syphilis, which cause degeneration in the cardio-vascular system. Hypertension found accidentally in making life insurance examinations or in making examinations for some other reason may often give the patient an opportunity of relief before serious trouble has begun in the vital organs. Any cause or allied condition should be sought for carefully and eliminated if possible. Over eating, rapid eating, the drinking of alcohol and smoking should be stopped. Habits should be regular regarding eating, sleeping and work. If the patient lead a sedentary life he should carry out moderate systematic exercise. Vacations to bring about complete relaxation should be insisted upon. Work should be moderate, and any tendency to mental or physical strain avoided. Rest in bed is valuable and very necessary aid in those cases with extreme hypertension or those suffering considerably from increased pressure. Sleep acts very beneficial, principally through the mental rest obtained. It is absolutely necessary that the mind be kept from worry as much as possible and to accomplish this it is often justifiable to keep the seriousness of the condition unknown to the patient. Worry acts in a vicious circle, increasing the blood pressure. Too frequent observations of the pressure often tend to concentrate the patient's mind on his condition. The layman of the present day is very wise on blood pressure, and trivial elevations cause him great anxiety which in turn shoots up the blood pressure. If, as is claimed, putrefaction in the intestinal tract is a common cause of hypertension, the anti-putrefactive diet is indicated. The intake of meat should be restricted to one or two meals a week; peas and beans should not be eaten. Von Hecht advises that salt, spices and the amount of water taken during the meal should be limited. In corpulent persons carbohydrates and fats must be taken in less quantities. Cereals, green vegetables, fresh fruits and vegetable purees are to be taken principally. The evening meal should be light. Proper attention to elimination through the bowels and kidneys is necessary. Where there is myocardial insufficiency digitalis and rest in bed are indicated. It has been proven that digitalis does not

increase the blood pressure, and can be given without danger. The hypertension person should be left to the dietetic and hygienic treatment, unless it is extreme and there is danger of cerebral hemorrhage or uremia. In such an emergency venesection with the removal of a pint or more of blood gives more lasting relief than any other measure. Nitrites may be given intermittently, as they lose their effect when continued long. Sodium nitrite, nitro glycerin and amyl nitrite are the drugs commonly used. Potassium iodid gives relief in some cases. In the toxemias of pregnancy hypertension should be treated along the same general lines as above. Where eclampsia is present the uterus should be emptied at once.

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Discussions on the papers of Drs. Walker and Rendleman.

Dr. Bierring, Des Moines: With reference to the first paper on the significance of heart murmurs, we welcome a discussion on that subject, because at this time there is no more important diagnosis than the recognition of the existence of incipient tuberculosis and organic heart disease. Many patients have been destined to a life of great anxiety and apprehension, because a heart murmur has been incorrectly diagnosed, as indicating an organic lesion. On the other hand cardiac murmurs have been diagnosed as functional when a sudden death revealed the error in diagnosis.

There is perhaps no more confusing condition to properly interpret than the so-called functional or accidental heart murmurs.

The condition of hyperthyroidism where vaso-motor instability is

so prominent causes perhaps the greatest difficulty. In exophthalmic goitre, heart murmurs, both systolic and diastolic are a part of the condition.

I have recently seen two instances where it was very difficult to distinguish from the cardio vascular signs, and particularly the murmurs, whether the heart condition and attending murmurs were due to a hyperthyroidism or a part of an organic valvular disease.

Cabot in the study of a large number of school children found that 60 per cent of them revealed a heart murmur, which in most instances was functional or accidental in character.

The essayist has given us some excellent guides for the recognition of organic heart disease, and to these one can add this fact that in every case of true organic murmur there is a certain sequence of events, as to change in heart form, and in the venous and arterial circulation, upon which we can safely rely.

In referring to the paper on high blood pressure, I feel that the essayist has referred to it in a very happy way when he described it as a condition. It may be said to represent a state or condition midway between etiology and treatment. No definite cause has as yet been offered for the condition of hypertension. We may say it is a part of our civilization, mainly the result of our strenuous mode of living, yet on the other hand it is difficult to associate it with any special organic condition.

There are local conditions of the blood vessels such as its vasomotor control, again the size of the vessel, its position in the body, that are to be considered in interpreting abnormal blood pressure. A palpation of the femoral artery is a far better guide than the brachial or even a smaller vessel like the radial.

To recognize hypertension as a compensatory phenomena is in keeping with our general conception of the subject at this time, and if that were kept well in mind I am sure the treatment for reducing high blood pressure would be much more logical.

There are two definite types of hypertension, one of which may be regarded as transitory, and the other as a permanent condition. The transitory type permits of distinct relief by removing the condition such as constipation, that apparently causes the temporary high blood pressure; but in the permanent type of hypertension which is distinctly a compensatory condition, one may hope to modify the blood pressure by one means or another, but a complete relief or cure is not possible.

Dr. C. F. Wahrer, Ft. Madison: In regard to Dr. Walker's paper we must not forget the story of the blind man when he examined the elephant. He took hold of his tail, and he said it was a rope, he got a hold of his trunk and he said it was a serpent, he got a hold of his leg and said it was a tree.

Take the man described in Dr. Walker's paper and lay him on a bed, cover him up with a sheet, cut a trap door in the sheet over the pericardium and let a man come with a stethoscope and discover the murmurs, and his diagnosis will be just as good as that of the blind man. Otherwise, Dr. Walker wishes to say, that we must not take a snap shot diagnosis without having all the things bearing on the case before us. On account of not doing that many a prospect in life has been ruined by an unnecessarily gloomy prognosis, based on insufficient data.

We should especially analyze the history. We should not do like the judge when he sentences a man, that in so many days he was to be hanged by the neck until he is dead. We must not pass death sentences for almost trivial heart affections.

Nearly all heart diseases, will give you ample time to make a diagnosis, and teach that man or woman so to live that they may live out the usual time.

In regard to hypertension, I desire to emphasize the fact, that we have before us a broad field, full of tragedies that might be averted if we could direct these people in time and if they listened to what the doctor said to them. Briefly stated, arteriosclerosis, means excess plus predisposition, and the causes may consist of physical causes. They may consist in a man hitting all the high spots; he may indulge in too much wine, women and song, or it may be a chase of the almighty dollar. But we are told by the second essayist that we must especially avoid mental strain. These people who have arteriosclerosis and hypertension, are the very exponents of worry and strain, and nobody is more guilty than the average doctor about following his teaching. We must teach these people not to be in such a great hurry, and if we can get them in time, we can never possibly strike a retrograde, but we may stop the disease and life may be carried on in a happy and useful way.

THE PRESENT STATUS OF VACCINE AND SERUM THERAPY

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In this paper there shall be no attempt at originality other than style of production, all articles in current literature have been consulted and special workers corresponded with, in attempt to secure reliable data, which will be of use in clinical work.

Vaccine Therapy.

Vaccine therapy as an immunizing agent is far from being a new idea; Orientals were practising sub-cutaneous inoculation with the direct or unweakened pox virus two hundred years ago. The next advanced step, was the work of Jenner in 1786 who used the cow-pox an attenuated form of the virus. Koch in 1880 marked another epoch with the tubercular bacillus—and some of you can remember what a laugh it caused—the bacterial origin of disease! Wright, stating his views ten years ago, led us to believe that with vaccines there would develop the most important therapeutic advance of the age; this seems correct. Are we to sanguine in hoping to see the day when all will be known of these bacteria that cause disease, their families, characteristic principles, habits, products, etc.? Let us encourage the work.

A few principles of bacterial disease we must recognize before taking up the use of vaccine, in order that we may more fully understand what it is for. 1st. The microorganisms enter the body, gain a foothold, grow, multiply and cause mischief (all steps in variable degrees). Some bacteria cause symptomatology by emitting toxins (tetanus) some by dying and liberating their toxins (diphtheria, typhoid, etc.); the toxemia of disease is far from being understood, we do not know what toxins are, except that they are a metabolic product of micro-organisms and that their presence excite physiological abnormalities and that each toxin is identical with the stain or group of its originator. There are three expressive terms in medical nomenclature associated with this part that are worthy of remembering, viz: toxemia, a condition in which the toxins alone are in the systemic circulation; septicemia, in which the bacteria plus their toxins are in the circulation; pyemia, often stated septico-pyemia when well advanced, in which condition bacteria, toxins and their products are in the circulation.

The second principle we should know is that as soon as the bacteria invade the human economy there is a resistance instituted; nature, the true physician, attempts to protect against the invading army—this varies in degrees, depending on two factors; virulence of the type of infection, and the power to produce passive immunization of the individual. Within the blood stream there comes to be that 'something' we know not what (bacteriolysin, cytolsin,

opsonin, phagocytosis, etc.) which gradually or swiftly overcomes the infection, or vica versa; this 'something' is not present in the individual previous to the disease, but is there after recovery—noted in acute exanthematous diseases, oftentimes for the remainder of the individuals life, (one attack conferring immunity) also in other infections for periods of variable length.

There is that something—let us call it 'antibody'—for a recognizing term, which is the factor that makes for a return to normal, that keeps the infection in check just in proportion to its plentifulness or strength. Nature with it produces passive immunity. Man taking this cue, is endeavoring to hasten this process, to cause a production of the antibodies early in the disease before the disease bearing army gains magnitude, before the body powers are lowered and cell activity fatigued—this artificial process is called active immunization, it has been attempted in various ways, the object is commendable, the end justifies the means.

It would be well to mention in this place the chief obstacle confronting the use of vaccine therapy and that is our inability to diagnose correctly the type of bacteria infecting. It is a safe opinion that in the acute infection there is but one type of bacteria predominately causing the trouble, while on the other hand in the sub-acute and chronic infections there are two or more at work, so that we can readily see if one vaccine be used for another disease in the acute, or but one organism taken into account in the chronic infection, our results should be logically productive for evil. Hence the necessity of our being able to do culture and microscopical work, our ability to differentiate the organisms. A small, but efficient laboratory should be in or within reach of the hands of every practicing physician; an incubator, microscope, cultures, glassware, current literature and perseverance are all that we need in the way of an armamentarium to carry on the essential work with autogenous vaccines.

Of stock vaccines we will but speak briefly in this place, taking them up separately below. In the above, the necessity has been explained of securing the vaccine which contains the ability to produce the antibodies for the strain of disease germ governing the situation, hence the use of autogenous material, a vaccine made from pure culture of the organism infecting. This latter is not too sure, it has failed in instances wherein, to all appearances it should have succeeded, it would seem that more chances are taken in the employing of a stock vaccine. This statement should not be made so dogmatic perhaps, but it is made with a plea for more original scientific work on the part of the clinicians employing vaccine therapy.

Still another item tends to hinder the progress and that is the fact that the vaccines are prepared from bacteria grown on artificial media which although it may yield a luxuriant growth, the question

arises, is the substance gained for vaccination purpose identical with the substance formed by nature in her technic of immunizing?

Autogenous Vaccine.

This is prepared in the following manner: A pure culture of the organism, grown twenty-four hours, (slant media preferred) washed off with ten cubic centimeters (0.8 per cent) saline solution, the heavy particles allowed to settle, the remainder sterilized at sixty degrees centigrade for one hour; plantings are now made to determine if this bacterial emulsion is sterile. If a growth is secured—resterilization is necessary until no growth occurs; twelve hours is sufficient time to allow for the growth to take place. The vaccine should be resterilized after using, at least after using the second dose, to insure against contamination. As a preservative (0.25 cresol, one drop to 10 cubic centimeters) is recommended by some to be sufficient.

This material must be standardized and the method is simple. Equal amounts of fresh blood and emulsion are taken in the following manner: Draw up to the first mark in a blood pipette the fresh blood, next allow a small bit of air to enter and then draw up the emulsion to this mark, mix and spread on a clean glass slide with the aid of a second slide. The second step is to count five hundred red blood cells, also keeping count of the bacteria encountered; if in counting five hundred red blood cells, we count one hundred bacteria, remembering that there are five million red blood cells in a cubic millimeter the problem is as follows: $50 : 100 : 5,000,000 : x$ or $x=1,000,000$. Therefor there are 1,000,000 killed bacilli in a cubic millimeter there are ten million in a cubic centimeter; it is then only necessary for us to dilute q. s. in order to use any calibre syringe we may wish; the time consumed in the making of this is seldom over thirty-six hours, depending on the technic of sterilization.

As to the dosage of vaccine, pointed literature is wanting. No set of rules can be laid down, however, this much is granted universally, that only the first dose is arbitrary, and that all succeeding doses depend upon the individuality of the patient, disease and doctor, and in committing an error, the golden rule in this is, as in all instances wherein health is concerned, "to give too little rather than too much."

In the administering of vaccine two phases are thought of—the negative (lowered resistance) and the positive (raised resistance), the latter is the one we wish to secure; and it would seem, that if this could be reached without the negative phase encountered it would be commendable.

The negative phase consists of a local reaction, moderate or severe, a decrease of the patient's and an increase of the diseased resistance. This is followed by the positive phase, a decrease of the disease symptoms; these phases are relative to the dose. A too large

dose administered is followed by a severe local reaction, etc., which lasts for a period of twenty-four hours, after which there is no positive change for the better; with too small a dose neither the lowered or raised resistance is met with. In general the dose in the acute infection is not readministered before the second or third day: in the chronic infection it is thought to be desirable to get a reaction (negative phase) and a larger dose is sought—but a longer time is allowed to elapse between the doses; in moribund cases the patient's resistance is so lowered that the vaccine will not be able to cause either phase.

Richards (J. A. M. A., LXI. p. 9874) concludes his paper by saying that vaccines are for one purpose only and that is to produce prophylactic immunity and to increase the resistance of an individual by active immunization and they should never be used to the exclusion of other methods of treatment that tend to limit the extent of the infection; abscesses should be drained, diet and hygiene considered and vaccines recognized as valuable adjuncts in combating infections.

With these foregoing facts clearly in mind we shall take up separately each vaccine briefly and the disease in which it plays a part in the curative treatment.

Streptococcus. Of this there are several species each species differing in the different strains for these reasons autogenous vaccine is advised; erysipelis, septicemia, pyemia and cellulitis have been treated by its vaccines, with variable degree of success; the pyogenic, homolyzing and green pus producing organism differ much and should never be used interchangeable in vaccination.

Initial dose—the acute conditions, two to four million, in chronic conditions ten to twenty millions (Emery, Immunity p. 362).

Staphylococcus. There are three species recognized (citreus, albus and aureus) these differ widely, however, they differ little in the different strains of the same species, this reason makes the stock vaccines advantageous over the autogenous; septicemia, pyemia, furuncles and carbuncles, and acute osteitis (periostitis and osteomyelitis) have been treated with their vaccines quite successfully.

Initial dose—twenty to fifty million, in the chronic infections two to four hundred millions; it has been run up to enormous amounts (10,000 millions) by gradually increasing the dose.

Gonococcus. Two strains have been isolated by Torrey (J. M. R. 1907, p. 329) which have more immunizing effect than other strains, he calls them A and C. On account of the autogenous vaccine being difficult to obtain it is advised that these or similar strains be used in the preparation of vaccine for the gonococci. The acute, subacute and chronic lesion of the disease with their complications are treated and brilliant results reported, especially in the treatment of gonorrheal arthritis.

Initial dose—twenty to eighty millions.

Urethritis Vaccine. This product is on the market and is said to contain seven species of microorganisms, each species represented by two different strains—micrococcus gonorrhea, catarrhalis, bacilli coli and pseudo-diphtheria, staphylococcus pyogenes albus, aureus, citreus and a culture of streptococcus pyogenes. It is an established fact that in the chronic stages of the disease one or more organisms are found in the secretions of the adnexia (prostate, seminal vesicles, bladder). The claim for this vaccine is that in the cases of subacute and chronic gonorrhea it holds a remedy worth trying. It is administered subcutaneously in the usual manner; the dose recommended is two hundred and fifty million as an initial dose and to be gradually increased.

Colon Group. Of its species and strains there are included the typhoid bacillus and paratyphoid alpha and beta. Urinary cystitis, pyelitis and other local infections caused by this disseminator of the human race (colon bacillus) have been benefited by the vaccine treatment, in some of those instances of cystitis of the aged an autogenous vaccine made from a culture secured from the urine, have been curative. For the prophylactic value of typhoid vaccine, the reader is referred to the statistics of our army, hospitals, etc., to find satisfying results obtained. As a curative measure in typhoid, the early use in the treatment has been reported of value; the material is all too scant to base conclusions upon.

Initial dose for the autogenous vaccine should range from one hundred to two hundred and fifty millions. For the typhoid, as a prophylactic in the U. S. A., three doses of the vaccine are given, ten days intervening between each dose; the first contains five hundred million germs, the second and third ten hundred million each. With this there is a reaction following the injection, headache, malaise, and considerable local inflammatory reaction, all symptoms passing off in twenty four hours.

Tuberculosis. When we talk with White, of Pittsburgh, who himself suffered right apical tuberculosis, and secure his personal views concerning the value of tuberculin, and also see the doctor and his patients benefited, we are in a measure convinced that added resistance can be secured in selected instances, the dosage being given careful study. Many clinicians advise the starting with an extreme low dose of 0.000001 milligram; all are firmly united in the opinion that a negative phase is to be emphatically avoided.

The mixed infection, staphylococcus among the greatest, that causes the mischief after incipency, is benefited by the use of mixed vaccines.

Pneumococcus. Four groups (Cole J. A. M. A. LXI. p. 665) have been studied; there is no certainty that vaccine is of benefit in lobar pneumonia; in the chronic infections by this organism, good results are accomplished, especially in empyema. Other bacteria,

Pfeiffer's and Friedlander's, have been used to advantage in the same instance.

Small Pox. This vaccine was mentioned in the beginning and needs but passing mention to place it here as a true prophylactic vaccine.

Acne. The bacillus of this disease furnishes a vaccine that has been of slight value to the dermatologist.

Cholera and Plague have come in for their study along the line of immunology the technic of vaccination is like that of typhoid.

Serum Therapy.

In discussing the serums, like vaccines, we should remember the principles upon which it rests; in the protection of the animal body against bacteria two factors are known to be of importance; that the bacteria are acted upon first by the opsonin, found in the blood stream, thus prepared for phagocytosis by the leucocytes by which they are destroyed. In the infection that runs a favorable course the disease germs stimulate cell activity to produce immune opsonin, which in turn acts on the bacteria, as just described above; an increase of leucocytes increases the body's ability to destroy the disease horde; while this explains the getting away with the bacteria it does not explain what takes care of the toxins, we practically know nothing of the endotoxins, their makeup or the way in which nature neutralizes them.

Specific medication is aimed to aid and assist nature in producing body resistance (immune opsonin) this is, as we have tried to explain under the subject of vaccine, attempted by injecting killed bacteria, these having been found to act similar to the living; and on this principle the vaccine therapy is built. Produced by man in the animal by living or dead organisms it is, active immunity, the immune bodies being produced by the body cells on active stimulation; from this animal's blood stream the serum is produced for use in the treatment of infections (the horse most often used), increasing doses are given of the living cultures until no reaction is obtained. The animal is bled, the serum collected and this fluid standardized by testing it out on the lower animals with a control; e. g. a rabbit is treated with the serum for a time with definite doses, at the end of which time it and a second rabbit (unimmune) are injected with the living culture; the unimmune rabbit succumbs, the other does not, if sufficiently immunized. The value of serum treatment in a few of its well known uses is indisputable.

Diphtheria antitoxin ranks with small-pox vaccine as a specific and we shall mention it as heading the list of serums.

Tetanus. For this antitetanic serum is on the market, and has been used for a number of years with excellent results. It should be used in large doses after the symptoms have developed, fifteen hundred to thirty hundred units q. 4 h. until benefit is obtained, dependant upon the condition of the patient: it should be injected

intravenously and intraspinally in the case that does not respond immediately to the intramuscular method of injection (if the spinal route is chosen a sufficient amount of spinal fluid should be withdrawn to allow the injection of ten to fifteen cubic centimeters of the serum, to avoid increase of intracranial pressure). As a prophylactic treatment it has been so widely used by surgeons in those cases of dirty punctured wounds, Fourth-of-July accidents, etc., with such a degree of lowered mortality that it is recommended as the only adjunct to aseptic surgery in treating such conditions.

Streptococcus Serum. If this serum is injected in from two to six cubic centimeter quantities into a guinea pig and permitted an interval of time to elapse, the pig will withstand an amount of the living virulent streptococci that will kill the control animal (Weaver J. A. M. A. LXI. p. 662), their immunity is of short duration, further it has little effect on the established infection. The infection, however, does not run as rapid and fatal a course in man as in the guinea pig and for this reason, it is thought by Weaver, it will have some curative effect on the human; it is to be brought in contact with the infecting cocci as quickly as possible; in urgent cases this is done intravenously, large doses required—thirty to one hundred cubic centimeters. A favorable indication after use is a decreased temperature, and improvement in the local and general toxic condition.

Pneumococcus Serum. Anti-pneumococcus serum according to Cole (J. A. M. A. LXI. p 665) to be effective must be given early and in large quantities; the method of use is to administer two cubic centimeters subcutaneously to determine if the patient is hypersensitive; as soon as the type of organism is determined, fifty to one hundred centimeters diluted one half with physiologic salt solution is injected intravenously and not readministered usually oftener than twelve hours; since the pneumococci as far as their immunologic properties are concerned, are divided into distinct groups, it is necessary to administer the sera active against the group to which the organism infecting belongs. Highly active serum against two groups of pneumococci have been obtained and treatment carried out in a small group of cases. Weaver reports the effect favorable, the mortality low. And other factors that bespeaks good for this form of treatment is its ability to render the blood stream sterile according to this observer.

Diplococcus Meningococcus. Flexner's anti-meningococcic serum has been used over a sufficient period of time and in sufficient instances to prove it invaluable in the treatment of this disease which formally held a mortality greater than eighty per cent, bringing the per cent down to lower than thirty; early and accurate diagnosis makes it possible to still lower this mortality per cent.

Initial dose—fifteen to twenty cubic centimeters given intraspinally (an equal amount of fluid is first drawn off) immediately

after the diagnosis; repeated in six hours, the condition of patient and disease determining the following administration.

Anthrax. Anti-anthrax serum, by some called Sclavo, has been used with good results; it can be obtained through the manufacturers with directions for use. The malignant pustule diagnosed, 100 cubic centimeters are intravenously injected stat and 20 cc. q. 8h. following until all symptoms have disappeared.

In Conclusion. Vaccines have an immunizing value previous to or early in certain infectious diseases for periods of time varying in length.

They have greater value in those infections that do not kill the victim quickly; they have little or no value against those infections that culminate quickly (pneumonia, diphtheria, tetanus, streptocemia, etc.) they are contra-indicated in extremis; they should be used early. A correct diagnosis in minutiae is extremely necessary.

The serums carry with them immunity to certain known infections. They have greater value in those stated infections that destroy life quickly than vaccines. They can be used at any time preferably early, and they have no contra-indications (except anaphylaxis).

Active immunity carries immunity for a far shorter time than passive immunity.

FRACTURES OCCURRING IN CHILDREN*

LOUIS SCHOOLER, M. D., Des Moines.

To the laity a fracture is a fracture, and a surgeon who cannot repair it without blemish is a poor surgeon and should be held accountable for results. On account of the longer life expectancy in younger persons, the results are of far greater importance than are those at the other extreme of life. The injuries to the bones in early life are not likely to be of as extensive as in old age, complete fractures being less frequently met with. The complications met with are more frequent and of greater importance. Epiphyseal and adjacent injuries in connection with the fracture of the long bones are comparatively frequent as complications and are of the greatest importance; therefore, it is these fractures that I desire to emphasize.

The character of the complications is not always easily ascertained by the usual methods of examination. Fortunately in most cases the little patient can be easily removed to the hospital or to the physician's office for a Röntgen examination, which will clear up the doubtful points. This is more easily accomplished with the child than with the adult, for the reason that the child's time is of no value, whereas the adult usually conceives that his or her absence means the sacrifice of all business or household affairs.

*Read before the Iowa State Medical Society, Des Moines, 1913.

The complications which in my experience have given the most trouble have occurred in the vicinity of the elbow. Here the difficulties are greatest in neglected cases, where the swelling is very great or where reduction has not been accomplished and inflammatory exudates have not only been thrown out but have become organized.

The next in frequency is perhaps in addition to the involvement of the joint, which in this articulation may consist of a fracture of the condyles, with a dislocation of the elbow (usually backward), and in a fair number of cases there is rupture of the orbicular ligament, which allows lateral displacement of the head of the radius; a complication the more deplorable on account of inability to restore and retain the radius in place. This also renders the support of the fractured condyle on that side less secure, and when union occurs in a faulty condition with either condyle, the mobility of the joint is permanently impaired. In fractures of the coracoid process we lose the ability to flex the forearm. Fortunately this seldom occurs. But in fractures of the lower end of the shaft and the splitting between the condyles, known as the T-shaped fractures, we have the same result for a time, at least, on account of the callus filling up the intercondyloid space, so that when attempts are made to flex the forearm on the arm the coracoid is brought squarely against the callus, thus blocking the normal excursion of the forearm. This may usually be overcome after the lapse of a few months or a year, if properly cared for; but too frequently the complaints of the child for fear of the infliction of pain, if passive movements are suggested, weigh more heavily with the parents than the advantages of a future useful limb, rendering the effects of the surgeon futile.

Another unfortunate occurrence that is too often met with is a second injury to the same parts during the convalescence of the patient which greatly enhances the difficulties attending the correction of the injury. In these cases the patient, though responsible for the carelessness, usually never forgives the surgeon (at least in my experience).

The above refers, of course, to simple fractures and their complications. In compound fractures the surgeon is justifiable in enlarging the opening sufficiently to inspect the entire fracture. This also enables him to see whether or not there are obstacles to the complete reduction and retention of the fragments.

The above remarks apply with equal force to other fractures, particularly to those of the knee and ankle, as well as to others which will suggest themselves to your mind.

Fracture of the epicondyle is not serious, and does not involve the joint. Fractures of the condyles are of serious import, and those of the inner more so than of the outer, as its position in the joint is altered and deformity produced.

Epiphyseal separation, complete or partial, with fracture and dislocation, are more frequent than generally supposed. Many cases treated as sprains in patients under fifteen years of age partake largely of combination of separation and fracture. The treatment of these injuries must be based upon accurate anatomical knowledge, aided by knowledge of how the injury was incurred. The intratrachlear or T-shaped, with either straight or curved lines of fracture, is usually produced in one of two ways: a fall upon the elbow drives the olecranon forward, splitting the bone between the condyles and giving the joint the appearance of a dislocation. Falls upon the hand drive the coronoid process in the opposite direction, producing the same kind of a disability. In all the cases of fracture of the bones at or near the elbow joint the action of the biceps on the anterior and the triceps on the posterior surface of the arm must not be overlooked, as they draw up the lower fragments, producing angulation.

Whether to dress in the extended or flexed position in practice seems to be quite largely a matter of choice, with a tendency of late to a preference for the straight position. This I believe to be faulty with reference to comfort and final results, excepting, of course, those cases of fracture of the olecranon. The normal angle of the radius with the humerus is fifteen degrees in supination, which is the feature to be observed in the adjustment of the fragments. This fact should always be kept in mind, as it is the position in carrying and stands well out from the thigh. Unless this is observed the familiar gunstock deformity will result.

With attention to the above, a dressing of plaster, with the forearm in exaggerated flexion will make the patient comfortable and the result satisfactory. If the child is refractory, this may be supplemented by a few strips of the same material around the chest.

Anchylolysis should be guarded against, but it is not as frequent as is generally supposed. It is usually overcome by the natural movements of the patient. If passive motion is deemed advisable, it can be accomplished under nitrous oxide anesthesia without difficulty.

Discussion.

Dr. J. F. Herrick, Ottumwa: The proper treatment of fractures is certainly one of the most important subjects the general practitioner will have to consider, for the reason that it is one line of surgery that every one who practices medicine will have to practice, and more people are subject to these troubles than to any other particular surgical conditions.

There is just one point I have in mind in the treatment of fractures of the long bones that I wish to speak of, and that is, extension. I believe, from my observation, that more ill effects result from want of proper extension than any other failure in treatment. Dr. Schooler spoke especially about fractures at the elbow joint. They are difficult to treat. He might also include the shoulder joint. I have used extension to advantage in both these conditions. For instance, a fracture of the humerus just above the condyles, splitting into the elbow joint. In that case the patient was put to bed, the arm put up at a right angle, the lower part of

the radius and ulna supported by a sling, and a broad band put around the elbow and around the arm below the elbow, and extension made over the foot of the bed. In that way, the extension put it in as near a normal condition as could be secured without an operation.

Within two months I had under my care three cases of fracture about the knee joint. One was a fracture of the femur above the condyles splitting into the knee joint. Another was a fracture of the tibia splitting into the knee joint. The other was a comminution of the upper end of the tibia involving the knee joint. In all of them the results were good; so much so that you could not notice, after a year that they had ever been injured. In the case of a boy with fracture of the femur and separation of the condyles it seemed as though the outer condyle had been drawn down too far, but after a few months use everything was all right.

I think proper extension in the treatment of fractures has been neglected.

Dr. S. Hornibrook, Cherokee: I rise to speak of this paper because I believe I have something to say about it which may be of interest. In Dr. Schooler's paper, valuable as it was, about fractures and injuries to the elbow joint, I think he failed to emphasize sufficiently the importance of passive motion. You frequently in the treatment of injuries to the elbow joint have a stiff joint, because you do not anesthetize your patient often enough to get good movement when it is possible to get it.

In the next place, in reference to what the gentleman said about extensions in fractures of the humerus, especially those near the shoulder joint, I agree with him that nothing is more important than extension, but I do not agree with him as to the way in which he practices it. My son, Dr. Freeman Hornibrook, now in Austria, has invented an apparatus for the extension of this fracture which produces the nicest kind of coaptation. It is simply a board placed alongside of the body, fastened with straps over the shoulder and around the body. A weight of any size may be attached similar to Buck's extension. It is surprising what results you get. You do not have to confine your patient. He goes about with his arm in a sling. I do not think a weight or pulley with the patient lying down is a form of extension as desirable as the one I have mentioned.

Dr. M. Bannister, Ottumwa: I wish to make a plea for a more careful setting of the Colles' fracture, the most common of all fractures, and most easily set. Lately I have noticed several very bad results. This paper brought this strongly to my mind. It seems in every one of these cases these fractures never had been set. Sometimes there is a little swelling and you imagine it is set when it is not. It seems to me there is no excuse for such a large proportion of poor results in setting the Colles' fracture. If the fragments are torn loose from their interlocking position, by a strong over extension, and then quickly brought into proper position they usually stay there. It seems to me, most of us do as Dr. Wahrer says, get in a hurry to get through and we are not careful in our original setting.

Dr. Lewis Schooler, Des Moines: My paper was a bob tail, that is, the title was larger than the paper. But the discussion has helped to equalize the paper and the title, for which I am very thankful to the gentlemen who have spoken.

The point I wanted to make is that I have seen a great many cases dressed in a straight position, without taking into consideration natural angulation. I think there have been more gun stock deformities than permanent cures. If you resort to passive motion too early, you may get a gun stock deformity. These are the results which you avoid by dressing firmly in the exaggerated flexed position, binding firmly with plaster paris, and around the body a few times if necessary. The patient is more comfortable, the result is better, and I do not know of so great a necessity for the passive motion. In a straight position the passive motion is much less easily accomplished.

The question of weight extension is an important one, and it is very important in fractures near the shoulder joint, or humerus, and fractures of the hip and femur. Extension in the fracture of the femur is not likely to be over-done, but of the humerus it is likely to be excessive, causing a separation of the fragments. It is a common saying by many surgeons, that you always expect some shortening in fractures of the femur, and that is because the ratio of the weight is not in proportion to the strength of the muscles.

THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

EDITORIAL

Malpractice Insurance in Iowa.

The medical profession in the state of Iowa must come to a realizing sense of the fact that no insurance covering malpractice can be taken out in this state. This subject has been ruled upon twice by two different attorney generals, and until some test case is brought before the Supreme Court, on appeal, this ruling must be regarded in a certain sense as the law of the state concerning insurance against malpractice suits. It was the contention of the Attorney General in both cases that it was contrary to public policy for a physician to be insured against the consequences of his own act. It is assumed that if a doctor was allowed to take out insurance for the purpose of indemnifying himself against any losses consequent upon verdicts for malpractice, that it would render him careless; if he was allowed to insure for the purpose of protection against the legal and court expenses, that it would have the same effect in his disregarding the best interests of his patients. I have had this matter up personally with our attorney generals, especially Mr. Remley. I attempted to show him that the annoyances, the losses that could not be compensated for, the losses to reputation consequent on a bad result, would be sufficient incentive to lead a doctor to use his best endeavors to secure a good result. I attempted to show furthermore that if the practice of surgery was made dangerous from a legal point of view, especially the treatment of fractures, then a doctor could not afford to take patients that were injured unless he knew them or unless they went to a hospital where they could be under his entire control, and that consequently the burden would fall upon the poor who were unable to pay a doctor, because a doctor would be perfectly justified in refusing to take the chances of treating patients who could not compensate him unless he knew these people perfectly well. It seems to me that the profession in Iowa can scarcely realize the danger they are subjecting themselves to every day in the practice of medicine and surgery. It is an admitted fact all over the United States that malpractice suits are becoming more and more numerous, covering every possible branch of medicine and surgery.

A letter received recently from Dr. Gay of Boston, chairman of the Massachusetts Committee on Malpractice, shows that even in that old conservative state malpractice is becoming much more frequent. He advises me they are having two to three malpractice cases every year, or fourteen cases in all since 1908 when this medical defense was taken up by the Massachusetts State Medical Society. The Massachusetts State Society has a membership of 3,432,

and Dr. Gay states that it has cost eleven cents per member up to this time. When the expenses of the Iowa State Medical Society were submitted to him for his opinion, he readily granted that it was doubtful if Massachusetts could have got off as cheaply as Iowa did. Illinois with a membership three times as great as ours, has a less number of malpractice suits than we have, and their expenses are forty-four cents per member. The state of Illinois admits other insurance companies to do business within the state, and that relieves the burden somewhat, but in Iowa, from now on unless there is some legislation upon the subject, or unless a test case is carried to the Supreme Court, the only defense a physician has is the defense that the State Society can offer. The Auditor of the state of Iowa writes me as follows:—"The Fort Wayne concerns have done considerable business through the mails, but not under the laws of the state of Iowa. They never had the right to do business in Iowa. There are no insurance companies that insure against malpractice in Iowa." There has been more or less sentiment in favor of making the assessment for defense of malpractice cases optional with the members. This is true in some of the states and it is true in Canada. In Canada, the members of the Canadian Medical Association on paying \$3.00 into the fund can participate in the benefits of this fund in cases of suits for malpractice. After considering the matter carefully the chairman of the Committee on Medical Defense of the Iowa State Medical Society is disposed to favor a plan which shall make it optional with the doctors, whether they pay this assessment or not. Our experience in this matter has lead us to believe that the fund collected will not be very materially reduced; that a certain number of doctors may prefer to take their chances alone in order to save \$1.00 or \$2.00, but with the fund that we have on hand and with the sentiment that must naturally prevail, we shall offer no opposition to an amendment to the by-laws at the next meeting of the Society. The two years at \$4.00 will give us a good working balance and we can probably trust to making this optional. It has always been a little difficult for us to understand how a medical gentleman could be persuaded to pay \$15.00 a year for a certain kind of insurance which gives him no better protection or even as good as the State Society offers at \$2.00 a year.

The American Medical Association in Court.

Much is made of a decision of the Appellate Court of Illinois by the Journal of the Illinois State Medical Society. We remember in early days of the reorganization of the A. M. A. the question came up as to the sufficiency of a state incorporation, and a committee of which Joseph D. Bryant of New York was chairman, and the editor of this journal was a member, was appointed to take the necessary steps to secure if possible, a National Incorporation Act. Some members of the Board of Trustees did not think this was necessary,

as eminent legal opinion had been secured to the effect that an Illinois Incorporation was sufficient. Our committee after two years was obliged to abandon the effort as a hopeless undertaking on account of the objections to National Incorporations. One G. Frank Lydston sought to compel States Attorney, John E. Weymand, by mandamus to sign a petition for leave to file an information in the nature of a quo warranto, alleging certain things; illegal election of officers, and unlawful transactions of the Association's business outside the limits of Illinois as being in conflict with the statutes of Illinois relating to corporations. The petition was dismissed by the Circuit Court, and on appeal the decision of the Circuit Court was reversed. If the decision of the Appellate Court is sustained by the Supreme Court, it will be the duty for the states attorney to bring suit against the A. M. A. for alleged violation of the laws of Illinois and the case will be tried on its merits. The petition recites certain things which, if true, the court believes should properly be matters for judicial consideration. This decision does not settle anything as the issues have not been joined and the case for the Association has not been made up or before the courts. The impression that an outsider gets of the whole matter is that the headquarters of the association should be changed to a more friendly center than Chicago.

Epilepsy as a Factor in Accidents.

A monograph of Dr. Matthew Wood of Philadelphia calls attention to the frequency of epilepsy as a cause of accidents; that drivers, chauffeurs and locomotive engineers are more frequently affected by the disease than is generally known. The importance of carefully watching men employed in these capacities cannot be overestimated. It is often difficult to get information because of the unwillingness of co-employees to make reliable statements. We have ourselves met these difficulties, and from unexpected sources. We have in mind an instance of a suspected epileptic who was a locomotive engineer running on a very busy line of road. His family physician at first declined to make a statement and after admitting that the man was an epileptic, contended that he ought to be allowed to continue on his engine as he would probably be safe. Another doctor said that his patient had only attacks of grippe. The engineer himself admitted that he was subject to violent attacks of epilepsy, and readily accepted other employment when the dangers to the public and to himself were explained. Considering the great dangers that may arise from epileptics in this line of employment, the withholding of information on account of professional privilege, is carrying the matter too far. Not long ago an assistant superintendent sent an employee whose duties took him through the yards where many trains and switch engines were constantly passing, for an examination, without giving me the history of the

case, which he well knew. I supposed he wanted the ordinary examination given employees. I gave the man a certificate which I recalled a few hours later when I learned from outside sources that he had attacks of unconsciousness. Why an official should do this it would be difficult to say, but if the man had been killed in one of these attacks, I am quite sure where the responsibility would be placed.

Malingering and Valetudinarianism.

The Workman's Compensation Act in England, according to some very eminent authorities, threatens to undermine English character among the working classes by introducing a widespread practice of malingering and exaggeration of the symptoms of disease and accidents, thus greatly prolonging disability following sickness and injuries. Dr. Byron Bramwell of Edinburgh, the well known nerve specialist, in an article in the April 19th number of the *British Medical Journal*, "ventures to predict that when the Workman's Compensation Act comes into full operation, malingering and valetudinarianism will become much more common in cases of ordinary sickness and illness than in the past, and the duration of ordinary sickness will be greatly increased, and consequently there will be a great increase in the medical attendance required, and in the expenditure required for sick pay and allowances during ordinary illness.

It had been observed in the past that colliers who have suffered from concussion of the spinal cord, pure and simple, rarely developed subsequent nervous symptoms, but during the last five years, cases of traumatic neurasthenia and traumatic hysteria were common.

There are two factors that will tend to work a hardship on the profession and on the government as well. First, the exaggeration of the effects of slight injuries, extending the disability beyond a reasonable time and requiring a more prolonged course of treatment. Second, the inclusion of disabilities not due to accident or sickness but which may serve to extend the effects of sickness or injury indefinitely. This latter is a fact well known to medical officers of corporations who have so frequently seen cases where the most extraordinary old and very remote conditions are introduced and held as the direct and logical outcome of an accident. To meet these exaggerated and fraudulent claims often requires the most skilled diagnosis.

Resolutions Adopted by the Faculty of the Medical School of the University of Minnesota.

"We, the members of the Faculty of the Medical School of the University of Minnesota, regard the commission evil in all of its forms as the greatest danger which threatens the Medical Profes-

sion today. Its continuance and spread would result in a loss of ethical standards and so degrade our calling as to make it wholly undesirable as a career for men of the proper character and training."

"This buying and selling of patients assumes a proprietorship which does not and cannot exist, is abhorrent to any right-minded physician, and must inevitably bring about a complete reversal of the true relation of the patient to the man he has learned to trust. The man who can and will pay the highest amount for patients referred to him will naturally receive the largest number, and the question of relative skill and ability is at once reduced to a minimum. No one who has had an opportunity to see anything of the practical workings of the commission evil can doubt the patient suffers by it even more than the profession itself."

"Commercialized medicine, medicine as a trade, is a degrading occupation, for the character of the work necessarily done is of such a nature as would make it impossible for men to undertake it unless they were inspired by altruistic and scientific enthusiasm and dominated by ideals such as have in the past been traditional in the Profession of Medicine."

"It is the manifest duty of any practicing physician or surgeon to give or to secure for his patient the best medical service obtainable. For securing this service of another physician for his patient he should either demand no fee, as had long been the custom of our profession, or if he deem a charge proper and necessary, such charge should be frankly and openly made and collected by him and by no other person. If the necessities of any given case require that a physician accompany a referred patient in his journey to the office of the consultant, or if without suggestion such referring physician is requested by the patient or his family to assist at any operation or special procedure he should, as in the preceding instances, make his own proper charge and present his account entirely separate and apart from that of the fellow physician, specialist or otherwise, to whom the case has been referred for special operative or diagnostic procedure.

In any case it is both unnecessary and improper that there should be any division of fees between physicians rendering service to any individual or family, and all accounts for service rendered should be individually kept and presented. Under no circumstances should any payment be made secretly or openly by the physician or surgeon to whom a case is referred when such transaction can in any way be considered as representing compensation covering a transfer or reference of a case; nor can reprobation be limited to the secret payment of a commission without destroying that cardinal principle of service which should govern the relations between attending and consulting men and their clients."

"It would appear from testimony available that underground

commissions are paid and received which represent useless and unnecessary service on the part of the referring physician by means of which he is enabled to secure a considerable fee and yet avoid the appearance of openly receiving a commission. It is evident that in some instances this matter is so cleverly handled by the unscrupulous consultant that the referring physician himself fails to see the real meaning and effect of this subterranean procedure."

"No argument is advanced in justification of this disgraceful procedure save that of self-interest, and we believe that we reflect the sentiment of the great body of our profession in declaring ourselves unalterably opposed to a practice which would convert a noble profession into a trade more ignorable than that of the public scavenger."—(St. Paul Medical Journal—July 1913.)

The Small Hospital.

The small hospital is with us to stay a long time. A good many of us believe that the average patient, suffering from one of the commoner diseases, can get about as good care in a well-equipped, well-managed small hospital that has an able medical staff as he can in the million-dollar metropolitan hospital. There are undoubtedly obscure cases that require the expensive paraphernalia of the large hospital to help the doctor to a correct differential diagnosis, but only about one case in fifty is of that character. Let us, therefore, accord to the small hospital a definite place, agree as to its proper limitations, and recognize that it is not the size of the institution that counts, but the size of the people who are conducting it.—(The Modern Hospital—Oct. 1913.)

Resolutions of Committee on Patent Nostrums. Illinois State Medical Society.

Resolved, That medical products shall be acceptable for advertising matter only when their composition is stated and no exaggerated claims or misstatements are made in the literature;

Further, it was the judgment of the conference that the same rule should apply to those products which are to be used for external application as well as to those for internal medication;

Further, that such biological products as are produced under government license should be acceptable, unless exaggerated claims are made for them.—(Illinois Medical Journal, Nov. 1913.)

Full-Time Clinical Professorship.

The gift of John D. Rockefeller General Education Board of \$1,500,000 to Johns Hopkins to endow additional full time professors, is an important advance in efficiency of medical teaching. The professorships effected are those of medicine, surgery, and pediatrics. While unrestricted as to seeing private patients, fees for such services will go to the hospital or university to further teaching and

research along the lines contemplated. It is estimated that the income from the fund will render it possible to pay salaries of about \$10,000 a year to the heads of the three departments.

Killed in New York by Autos.

Sixty persons were killed in the street traffic of New York last month, thirty-six of them children. Of this total automobiles were responsible for thirty-three, or nine more than in October, 1912, and, with the exception of September of this year, the largest death list from automobiles in the history of the city.

Automobiles have already killed 239 persons on the streets of New York this year, or eighteen more than they killed in the entire year of 1912.—(The American Practitioner—November 1913.)

I am reporting to you the fact that one O. C. Olson, an unlicensed individual who posed as a Natural Healer for a few years at Calmar, Ia., was indicted by the grand jury of Winneshiek county, and when the case was called for trial, plead guilty and was fined \$300 and costs. The county attorney prosecuted this case very determinably and deserves credit for work he did in securing a conviction, or practically the same in his pleading guilty.

F. A. Hennessy.

The McAnanish Brothers, Chiropractors, have been found guilty in the district court at Newton, Iowa, of practicing medicine without a license. They were each fined \$300.00 and costs, amounting to about \$1,000.00.

Harry P. Engle.

Dedication of the New Home of the University of Nebraska, College of Medicine.

The new \$125,000 home of the University of Nebraska College of Medicine was formally opened on Thursday, October 16th. Dr. Howard A. Kelly, professor of gynecology at Johns Hopkins University, delivered the principal address.

Award of the American Medicine Gold Medal.

It is announced that the American Medicine Gold Medal for 1913 has been awarded to Dr. Milton J. Rosenau, professor of preventive medicine and hygiene in the Harvard Medical School. In 1812 this medal was awarded to Dr. William C. Gorgas.

MEDICINE IN IOWA PRIOR TO 1876

D. S. FAIRCHILD, M. D.

Washington County.

Washington County is very similar in its general topography to the State at large. There is a general slope from the northwest to the southeast corner with English River on the north and Skunk River on the south, while Crooked Creek—a long stream reaching nearly across the county, at times dry—is about midway between these rivers, all three having a general southeast course. Along these streams there is found considerable bottom and swamp land, much of which is subject to periodical overflows, which has always been deemed a fertile cause of sickness, especially in the autumn months when malarial disease prevails somewhat extensively.

Pioneer Physicians.

Dr. Samuel Mealey settled in Washington County in the year of 1840. He was a graduate of Jefferson Medical College and had served as a surgeon in the army during the war of 1812. He died in the county in 1871 of old age. Dr. Mealey educated two sons in the profession—William and Thomas. The former was distinguished for his ability but died in the prime of life at Des Moines in 1864. The latter still lives at Pleasant Plain in Jefferson County, engaged in an extensive practice. (1876).

Dr. Cleaver and Dr. Lefler also came to Washington County about the year 1840. The former moved to Columbus City in Louisa County near which place he died 12 or 15 years since. The latter died in Washington, Iowa, in 1843.

Dr. W. H. Rousseau and Dr. Wm. McClelland came to Washington, the former in 1844, the latter the next year; both are still engaged in active practice in this place. (1876).

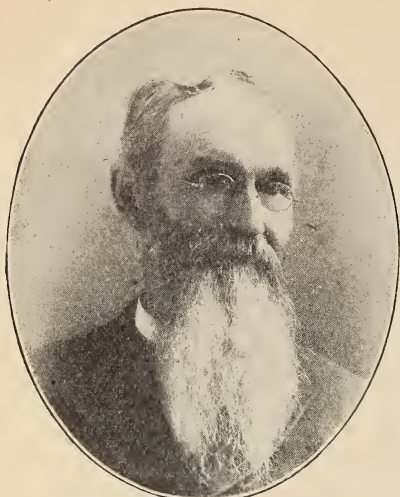
Dr. O. H. Prizer settled in Brighton in 1845 where he still lives in the full enjoyment of his faculties and the confidence of his patrons. (1876).

Epidemic Disease.

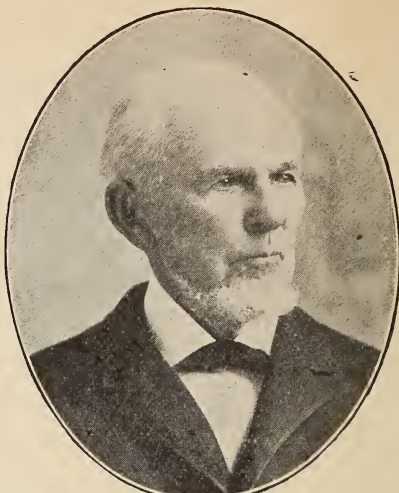
In 1853 Brighton, a town of about 500 inhabitants, situated on the bluff just south of Skunk River, was visited by cholera. Thirty-six cases occurred with a fatality of 75 per cent.

In 1853 occurred an epidemic of puerperal erysipelas especially at Richmond and its vicinity in the north part of the county and close to the English River. It is reported as having been very fatal and was apparently brought from Illinois by a family who came on a visit, and was undoubtedly carried from case to case by accoucheurs. An unusual number of cases of erysipelas have occurred during several seasons since the settlement of this county, but never save in the above instance, prevailed as an epidemic.

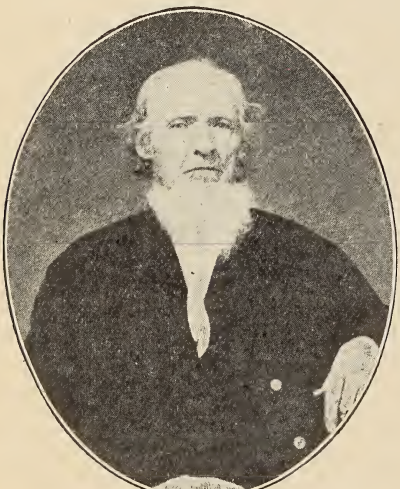
During the autumn and winter of 1864-1865 diphtheria was



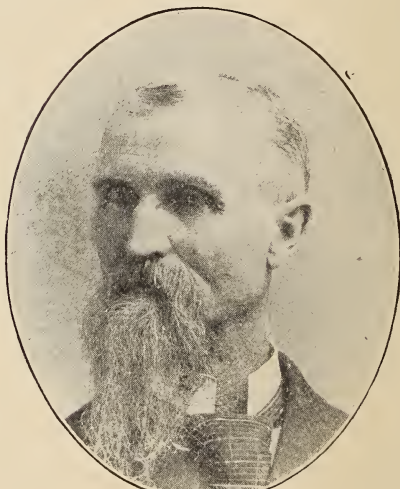
DR. JOSEPH MCKEE



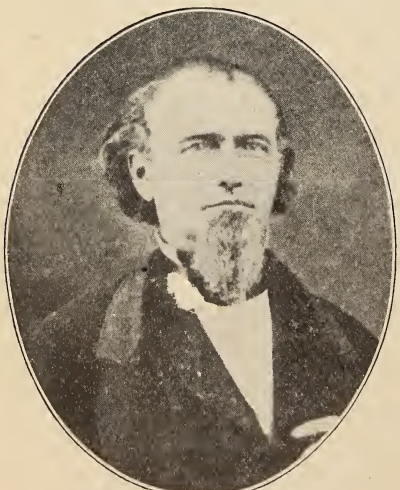
DR. WM. MCCLELLAND



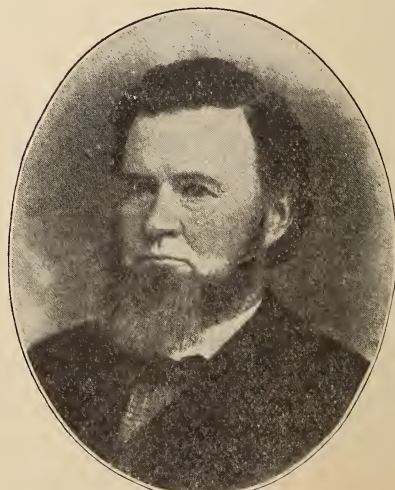
DR. SAM'L MARSHALL



DR. J. R. BURROUGHS.



DR. W. F. RODMAN



DR. W. H. ROUSSEAU

quite prevalent, and although for a time quite fatal, yet at no time did it arise to the dignity of an epidemic save in some very limited localities.

Endemic Disease.

About the year 1845 while the county was being rapidly settled, almost every inhabitant had some form of malarial disease. The endemic influence of malarial diseases are felt every few years, no location appearing to be entirely exempt.

There are no mineral waters in this county.

The number of practicing physicians in Washington County (1876) is 35, of whom 21 have diplomas and 14 have no diplomas. Regulars 29, of which 21 have diplomas. Irregulars 14.

Surgery.

The capital operations in surgery performed in this county are tabulated as correctly as possible, as follows:—(1876).

Strangulated hernia—4 times—2 deaths.

Cancer of breast—excised—6 times—3 deaths.

Trephining cranium—3 times—1 death.

Excision of large tumor—5 times—1 death.

Amputation of leg or foot—6 times—3 deaths.

Amputation of arm or hand—3 times—no deaths.

Excision of part of humerus—2 times—no death.

Lithotomy—one time—no death.

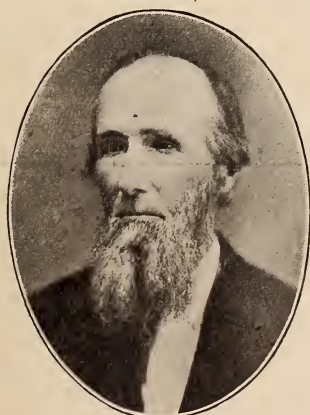
D. Seofield, M. D.

Addenda.

Dr. W. F. Rodman was born in Bucks County, Pennsylvania, March 20th, 1917. His family moved to Zanesville, Ohio, when he was one year old.

He was a graduate of Kenyon College, Gambier, Ohio and The Cincinnati College of Medicine and Surgery, 1852.

He practiced at Martinsburg, Ohio until 1856 when he came to Washington, Iowa, where he continued to practice his profession until his death, March 31st, 1882.



DR. A. S. COWDEN

Dr. Horace Carley located in Brighton in 1839, dying there the same year.

Dr. William McClelland, in the '40s, on account of the high price of quinine, began the use of Fowler's solution in malaria. His early success with this remedial substitute proved a veritable godsend to the early physician. Dr. McClelland was the ideal family physician careful, tactful, conscientious, abreast of the times, his sunny and cherry disposition a blessing in the sick room. He was permitted

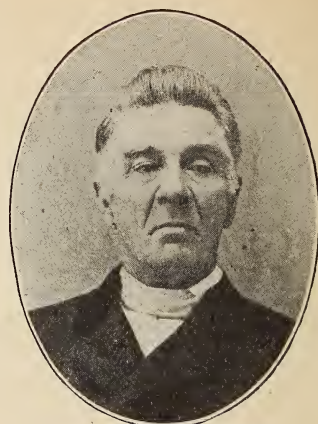
to continue in active practice until the advanced age of eighty-eight years.

Dr. E. C. Chapman read medicine in the office of Drs. McKee and Fraser in Washington in 1863-5, attending Keokuk College of Physicians and Surgeons in 1866-7, practiced a few years and graduated in 1878. Later he entered the service of the Santa Fe railroad. Since 1893, he has had charge of the Santa Fe hospital in Ft. Madison. His death occurred in 1913.

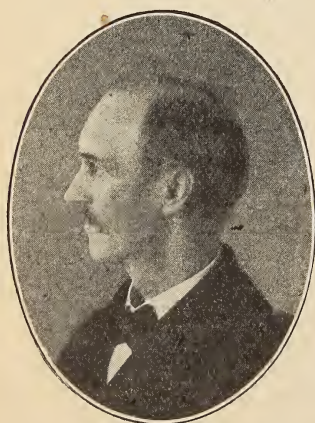
Dr. W. H. Rousseau was born in Kentucky in 1816, came to Washington, Iowa, in 1884, read medicine under Dr. W. B. Stone, graduated from Keokuk College of Physicians and Surgeons, and married Electa Atwood in 1845. Practiced in Washington until his death in 1893. An able physician, a true friend.

Dr. James R. Burroughs was born in Pennsylvania in 1833. Engaged in medical practice in this county in 1865 and continued so for thirty-five years, dying of pneumonia in 1900.

Dr. Burroughs was one of our best known practitioners, a merry, witty man, a cheerful man in adversity, a hater of sham and pretention, his friends were legion. In early life a successful athlete, in later life he devoted much attention to his fine horses. He lives in the memory of his friends.



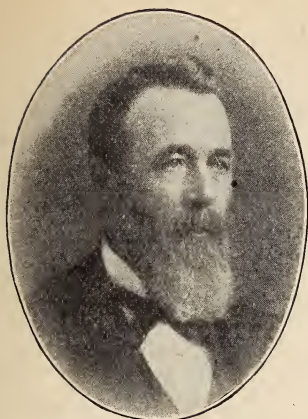
DR. O. H. PRIZER



DR. DARIUS SCHOFIELD

Dr. W. D. Crawford began practice in Illinois in 1876, came to Crawfordsville in 1882, where he died in 1885.

Dr. Joseph Decker Miles was born in Maine in 1825. After a common school education, he received his medical degree from Bowdoin College in 1853. He soon came to Iowa, reaching Crawfordsville with but one dollar left. Here he practiced until he entered army service. Commissioned a first lieutenant in the 11th Iowa, (Crocker's Brigade), wounded at Shiloh, re-enlisted as surgeon, following the victorious Union army until the close of the war in 1865. Dr. Miles was elected to the Iowa legislature in 1868-70; he was in the Iowa senate from 1872 to 1876; a candidate for lieutenant-governor in 1875.

**DR. J. D. MILES**

He returned to active practice in 1876. In 1883 he moved to Nebraska where he died in 1894. His widow still resides at Schuyler, Neb. A man with a gruff exterior and unsocial disposition, but withal a man of noble heart, well liked when well known, one who still lives in the minds of his friends.

Dr. J. C. Boice graduated from the College of Physicians and Surgeons in Keokuk and located in Ainsworth in 1874, moving to Washington in 1890.

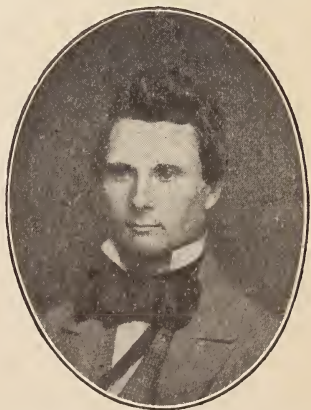
Dr. J. H. Hull graduated from the same school and also of Bellevue, located in Ainsworth in 1875, moving to Washington in 1892.

Dr. E. R. Jenkins also graduated from Keokuk school and located at West Chester in 1874, moving to Washington in 1885. He was associated with Dr. Scofield until the death of the latter. Dr. Scofield was president of the Iowa State Medical Society in 1882.

Other early practitioners of the county were Drs. W. E. Fraser, J. C. Robertson, W. R. Adair, H. Cushman, D. S. McConaughy, W. B. Ott, T. W. Bennett, J. G. Henderson, G. C. Wallace, S. P. Eckles, J. J. Rousseau and R. F. Parsons. There were some others but the complete data is not now available.

The Washington County Medical Society was organized in Washington in May, 1873. A constitution was adopted at the meeting in Brighton on September 3, 1873. In attendance at this meeting as charter members were Drs. W. E. Fraser, Darius Scofield, W. H. Rousseau, J. J. Rousseau, S. P. Eckles, Wm. McClelland, H. Cushman, J. R. Burroughs and J. C. Robertson.

May 26, 1875, a called meeting was held to discuss the advisability of organizing a district society. At this meeting were Drs. McClelland, McCandless, Prizer, Miles, Scofield, Cushman, Brice, McWilliams, McFarland, J. J. Rousseau and Fraser. Dr. Scofield was authorized to issue a call to the physicians of the counties of Washingdon, Louisa, Jefferson, Johnson, Keokuk and Muscatine. Later the counties of Lee, Henry and Des Moines were included. The South-eastern Medical Society was organized in Washington June 23, 1875. The second article of the constitution declared it to be an organization "To promote investigation in medicine in all its departments and general good fellowship between its members."

**DR. NELSON VAN PATTEN**

C. A. Boice

ABSTRACTS.

TUBERCLE BACILLI IN THE BLOOD.

Moewes u. Fr. Brautigam. Dutsche Med. Woch. Oct. 16, '13.

Numerous workers have studied this subject and with varying results. The earlier workers considered the finding of acid fast forms in the blood smears a sufficient proof of tubercle bacilli in the circulating blood. The same findings, however, were obtained with normal blood. Biologic tests have also given contradictory results.

Brautigam studied the blood of 30 patients with outspoken tuberculosis; by Ziehl's method a few acid forms were found, but they were plump rods, usually of a dark purple in contrast to the typical bright red organisms of the sputum.

With the Gram-Much stain granular forms were often seen, but the same were found when the stain only was used and with the blood and sputum of normal people. Culture tests were entirely negative although different media were used.

The blood of 50 patients was studied by animal control. At least 2 animals were injected with from 25-35 ccs. of blood from each patient; 140 animals being injected in all. In about one-half of the cases, 20 ccs. of blood were treated with antiformin, washed with normal salt and given introperitoneally. In addition many patients who showed change of symptoms, fever, or a positive tuberculin test were the further studied. In 12 patients with a marked tuberculin reaction, such tests were made. The carefully chosen animals, (guinea pigs) were killed, the first at eight weeks and the second two weeks later. In none was tuberculosis found. A few of the animals died from shock. In one animal only were tuberculus glands found. The control animal of this patient was normal. In three cases of miliary tuberculosis the findings were negative. The authors conclude that tubercle bacilli are not regularly present in circulating blood. It is not denied that they are occasionally so found but even this must be viewed as a transient phenomenon since in miliary tuberculosis there are periods of freedom from bacillemia. C. V.

 Personals.

Mr. and Mrs. W. R. Gillette announce the marriage of their daughter, Opal, to Dr. Quintus Colton Fuller, on Tuesday, December 13, 1913, at Fostoria, Iowa.

Dr. Lewis Wine Bremerman of Chicago has been appointed professor genite-urinary surgery in the medical department of the State University. Dr. Bremerman will be in Iowa City each Thursday, and will hold clinics Thursday afternoons at the University Hospital.

Dr. C. W. Hargens of Hot Springs, South Dakota, will during the winter season conduct a high class inn at St. Petersburg, Fla., devoted to regular guests and other persons desiring a winter residence or seeking the beneficial effects of a semi-tropical climate. St. Petersburg is located at Tampa Bay on the west coast of Florida. We have known Dr. Hargens for many years and feel that patients or doctors who desire the benefits of a warmer climate, cannot do better than visit this place.

A sixty days' tour of the well known European surgical clinics is being arranged under the auspices of the Georgia Surgeons club, to close with the meeting of the Congress of Surgeons of North America in London the latter part of July, 1914. Representative surgeons are invited, and may secure details of the trip from the secretary, Dr. R. M. Harbin, Rome, Ga.

Dr. Chas. J. Rowan at S. U. I.

We are advised that Dr. Chas. J. Rowan, assistant professor of surgery in the University of Chicago, has been elected professor of surgery in the State University of Iowa. He takes the place made vacant by the resignation of Dr. Wm. Jepson. We have not the honor and pleasure of Dr. Rowan's personal acquaintance but we have heard so many good things about him that we feel quite sure that he will fill the requirements of the place. The Journal most cordially welcomes him to Iowa and will give support to his efforts in bringing up the University to a place where it should stand. We feel grateful to the Board of Education for their efforts thus far in strengthening the Medical Department. We feel very sure that as time goes on, all the weak points in the medical school will be made strong and that our school will rank favorably with the other medical schools. We recognize the difficulties under which the medical faculty labor in securing adequate clinical material. The institutions located in large cities have a very decided advantage over us, and the burden on our part will consequently be greater, and our efforts must be commensurate with these difficulties.

BOOK REVIEWS.

A Treatise on the Diseases of Women. For Students and Practitioners. By Palmer Findley, B. S. M. D., Prof. of Gynecology, College of Medicine, State University of Nebraska; Gynecologist to the Clarkson Memorial Hospital and Douglas County Hospital; Fellow of the American Association of Obstetricians and Gynecologists; Fellow of the Chicago Gynecological Society. Illustrated with 632 Engravings in the Text and 38 Plates in Colors and Monochrome. Price Cloth \$6.00 net. Lea & Febiger, Philadelphia, and New York.

The announcement of the author in the preface at once attracts the attention of the reader. The author states that "this book is the natural outgrowth of the Diagnosis of Diseases of Women," written as will be remembered, some years ago. The author further says: "Much that was contained in the former work has been revised; the subjects have been reclassified and more than an equal amount of texts and illustrations has been added for the purpose of making a complete text book on the subject of diseases of women." It is an ambitious undertaking to write a book on gynecology that will at the same time serve as a textbook for students and a guide for practitioners, hence we read the book in a rather critical state of mind. After an excellent table of contents and a form for case histories comes a discussion of hemorrhage from the genital tract, which is treated of in a general way and again referred to in a more specific manner when diseases of the uterus are considered. This chapter aims to be suggestive of what a hemorrhage from the genital tract may mean. This is of course a part of the history of the patient and invites a careful examination and diagnosis. As would be suggested by the fact that Dr. Findley's first book was on the diagnosis of diseases of women, the methods of examination are given in much detail, bearing out the assumption that the author has strong faith in the importance of as complete a diagnosis as possible before definite treatment is undertaken. It is not quite clear why the author mixes medical and surgical gynecology as it seems without any special order of arrangement; for instance, ectopic pregnancy followed by non-operative methods of treatment, as baths, douches, electricity, serum and organotherapy, hygiene, dress, etc.

Commencing with chapter XIII is the elaboration of surgical methods of procedure; the preparation of the patient for operation, principles of

asepsis. One chapter is devoted to anomalies and malformations of the genital organs and one chapter to malpositions. In regard to uterine displacements, particularly retroposition, but little stands between the condition and an operation, although on page 310 we are informed that "retroposition per se is of little clinical significance", yet we are led to infer that there is generally some cause that requires an operation which would be discovered on skillful examination. It has been the experience of most surgeons that patients are brought to us for operation, who are suffering from a variety of nervous troubles supposed to be due to some abnormal position of the uterus, and are assured that if the organ is fastened up by some kind of an operation, these unpleasant symptoms will rapidly disappear. Many disappointments have grown out of these operations. It is to be regretted that Dr. Findley has not been more explicit on this point. In regard to the operations for retropositions, we believe the author is perfectly correct as to the merits of the methods he recommends.

There are five chapters on inflammations of the vagina, uterus, ovaries, and tubes, and is so well arranged that anything which relates to these subjects is quickly found. The diagnosis and pathology of these conditions is concisely set forth and the treatment indicated is so clear and judicious that the student and general practitioner will find a practical solution of what he wants: a good way to cure the ailments.

Tumors and new growths involving the uterus and ovaries, non-malignant and malignant, are studied from every point of view, and as every one feels today, special thought should be given to recognizing malignant disease at the earliest possible moment, and the most radical treatment employed, consistent with the accomplishment of good to the patient. We recommend that these chapters be read with special care by every physician who accepts the responsibility of treating diseases of women.

This book has been written with a clear conception of what the practitioner needs. Nothing has apparently been overlooked; there is but little repetition and there is no display of instruments needed for every operation. The author fairly presumes that the operator when he knows what he wants to do, will also know what instruments he will need and how many assistants. He does not attempt to place the most elementary facts alongside of the most difficult and trying undertakings of surgery.

We highly appreciate this work and recommend it to the student and practitioner most heartily.

D. S. F.

Causes and Cures of Crime. By Thomas Speed Mosby. 354 pages, illustrated. C. V. Mosby Co., St. Louis, 1913. Cloth, \$2.00.

The relationship of crime to disease, more particularly insanity, has become so well recognized ever since special attention was called to it by that great criminologist, Lombroso, that a book dealing with the causes and cures of crime is surely of interest to medical men.

Under etiology are chapters on cosmic, social and individual factors of crime. Prophylaxis is considered in chapters on eugenics, asexualization, education and social amelioration. Under therapeutics, we find chapters on the theory of punishment, indeterminate sentence and parole and the new penology.

The numerous authorities quoted indicate that the author is a wide reader. The data is presented in an interesting manner, readily understood by an intelligent reader. There are, however, frequent repetitions, and one fails to find the definite statements and systematic presentation which a scientific reader always looks for.

The influence of heredity on crime is well represented by the well-known Juke Family. It is stated that of the 1200 individuals, according to the author, who represent the progeny of Ada Juke, nearly 1,000 were criminals, the prosecution of whom has cost the state of New York \$1,300,000.00.

Regarding eugenics, the following sane advice is given. "Men and women, through education, may employ correct principles in matrimonial selection."

The conclusions arrived at by the author seem to be sane and are in line with the newer conceptions that imprisonment is not primarily for the purpose of punishment of the individual but for the segregation of the individual from society for the purpose of accomplishing his regeneration and of preventing the perpetuation of criminalistic traits through the influence of heredity.

Students of crime—whether medical or not, will find the book instructive and inspiring.

H. A.

Studies Concerning Glycosuria and Diabetes. By Frederick M. Allen, A. B., M. D. W. M. Leonard, Publisher, Boston. 1913.

In the preface it is stated that three years of research in the Laboratory of Preventive Medicine and Harvard Medical School was devoted to this work. The author firmly states that in other languages there are several recent works on glycosuria and diabetes, but in the English language there is no recent book covering this difficult field. Dr. Allen is surely to be congratulated on the courage manifested in this undertaking and for his patient devotion to this exalting subject. Nearly 1200 pages are devoted to glycosuria and associated conditions; every page of which must be based on experimental knowledge. The first chapter is given to the study of glycemia, glycosuria, and glucose tolerance. In this chapter considerable space is given to the consideration of the causes and influences which increase the permability and decrease the permability of the kidneys. This inquiry must of course be based on experimental evidence. The importance of this can be understood when we come to consider the confusion which may arise as to the presence or absence of glycosuria, as for example in diminished permeability of the kidneys, for sugar. A small percent of glycosuria may be assumed while in fact a condition hyperglycosuria may exist.

In relation to the difference between clinical and experimental diabetes the author while admitting a similarity between them, is not able to say at this time what the difference is beyond a well formed opinion that "All diabetes is pancreatic, and the carbohydrate disturbance is due to lack of the glucose amboceptors supplied by the pancreas. It is possible that the other metabolic disturbances are due to the lack of pancreatic amboceptors for other substances, but this suggestion is not yet proved." This is naturally preceded by a chapter on "The Amboceptor Hypothesis".

A chapter on Diabetis Insipidus is entirely speculative in character. No experimental work seems to have thrown light on the nature of the disease.

The chapters on Classification of Glycosuria is an elaborate argument concerning the various theories of what diabetes is. Experimental work has mostly a negative value. On reading these chapters we get a correct knowledge of what different workers have observed and studied clinically, but do not feel enlightened as to what diabetes is.

The chapters on Acidosis and Phloridzin are full of interest. These subjects have so recently been brought to the attention of the profession

that what is known should be carefully studied by every physician and specialist who will find some light on conditions which have been heretofore unexplainable.

The argument on adrenalin is extremely interesting and while experimental work offers but little of positive value it has a certain important bearing in a negative way on the theories on the inter-renal system which is so necessary to life.

The chapters on the nervous system in relation to glycosuria and diabetes and what author designates as "Miscellaneous Attempts at Diabetic Therapy" is extremely interesting and should be read by every scientific physician, and lastly the polyglandular doctrine and the internal and external secretions constitute a very attractive study. At first sight the size of the volume and the subjects treated are most discouraging, yet when one begins to read in earnest the student will have the feeling that came to us that we are getting good returns for our effort, and will close the volume with a wider knowledge of a very important subject.

D. S. F.

Obstetrics. A Manual for Students and Practitioners. By W. P. Manton, M. D., Professor of Obstetrics and Clinical Gynecology, Detroit College of Medicine, Detroit, Mich. Second edition, revised and enlarged; including selected list of State Board Examination Questions. 12 mo. 292 pages, with 97 engravings. Cloth \$1.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

The publishers of the book state that its purpose is two-fold:—1st, to furnish the doctor with a means for refreshing his memory and 2nd, to give the medical student a means of review for examinations. Both of these are well fulfilled, and the book would seem to be of great service to the practitioner who wishes to assure himself of the correct procedure in any abnormal case, without being compelled to digest hurriedly a chapter from the larger works on obstetrics. The questions at the end of each chapter are of course of most value to the student, but the graduate may find it well worth his time to find out just how definite is his understanding of the subject. The book is certainly well worth its price and more.

H. R. R.

Medical and Sanitary Inspection of Schools. By S. W. Newmayer, A. B., M. D., in charge of division of Child Hygiene, Bureau of Health, Philadelphia, illustrated with 71 engravings and 14 full-page plates. Published by Lea & Febiger, Philadelphia and New York, 1913.

This is a book of unusual value to practitioners in general and all those interested in the subject of hygiene and sanitation, and is particularly valuable to health officers who are engaged in the administration of sanitary laws. The amount spent on schools every year is almost equal to half what the United States expends for all departments of the Federal Government. This, together with the fact that every child in the country is entitled to an education at public expense, appears as sufficient reason for medical and sanitary inspection in the schools. These facts are brought out very sharply in this excellent book. It calls attention further to the importance of medical inspection of school children as means to aid the work now being done in the prevention and cure of tuberculosis. At about the beginning of the school age, tuberculosis becomes the most prominent of communicable diseases among children. Without close inspection, obviously many of them decline to a point where they are incapacitated to do work of any kind as well as being a menace to those at home.

He prevents valuable printed forms for reporting cases and the keep-

ing of case records. His advice to administrative officers is timely and the relative importance and proper duties of health officers and nurses are clearly set forth. The statistics presented showing states and cities which have, and others which have a right to have medical and sanitary inspection of schools is interesting. The statistics on the relative frequency of the various forms of physical and mental defects found in school children are very illuminating.

His idea of the construction of school buildings embody the latest knowledge on this important subject. The inspection of buildings, grounds, ventilation, heating, lighting and the method of conducting the inspection of children are set forth in interesting detail. The Binet tests for the dementality of children are set forth clearly and concisely. The proper methods of handling the mentally subnormal are outlined. He believes in a selection of medical inspectors for schools by civil service and competitive examinations.

T. F. D.

A Clinical Manual of Mental Diseases. By Francis X. Dercum, M. D., Ph. D. Professor of Nervous and Mental Diseases. Jefferson Medical College, Philadelphia. Octavo of 425 pages. W. B. Saunders Company. Philadelphia and London. Cloth \$3.00 net.

The author of this work is so well and favorably known to the profession that anything that comes from his pen will at once attract attention.

This book is based upon the annual course of lectures delivered by Dr. Dercum at the Jefferson Medical College, and therefore presents the subject in a practical manner for the use of the student and the general practitioner.

Part First includes a chapter on Classification and then proceeds to enumerate five groups of mental affections:

Group I. Delirium, Confusion and Stupor.

Group II. Melancholia, Mania, Circular Insanity.

Group III. The Heboid-paranoid-(Dementis Precox Paranoia.)

Group IV. Neurasthenic-neuropathic Insanities.

Group V. The Dementias.

After a full consideration of the subjects included in these groups the author takes up the Clinical Forms of Mental Diseases Related to the Somatic Affections. This makes up Part 2.

Part 3 includes the Psychologic Interpretations of the Symptoms, and Part 4 Treatment.

This book is cordially recommended to the practitioner who is interested in mental affections, as he will find it helpful in considering the ordinary types of mental disease.

D. S. F.

Pyorrhea Alveolaris by Friedrich Hecker, B. Sc., D. D. S., M. D., A. M. Member of Academy of Science of St. Louis. Illustrated. C. V. Mosby Co., St. Louis, 1913. Price \$2.00.

A valuable and readable book, presenting in convenient arrangement and by ample illustrations the important subject of pyorrhea. Divided into eleven chapters, treating in full detail the various forms of pyorrhea, the bacteriology, the pathology and the technic for making stains and vaccines. One of the conditions which often looms big, this little book helps place pyorrhea where it belongs—a frequent cause of serious disease.

E. Merck's Annual Report of recent advances in Pharmaceutical Chemistry and Therapeutics, 1912. Volume XXVI. E. Merck, Chemical Works, Darmstadt, 1913.

This volume is larger than that of previous years, about 540 pages. The opening article is on Lecithin, bringing up to date the knowledge of this valuable remedy. Prof. Dr. R. Heinz of the University of Erlangen contributes a valuable paper on the Standardization of Digitalis Preparations.

While published primarily for distribution to teachers of materia medica and therapeutics and medical and pharmaceutical libraries, some copies always remain which are sent to interested physicians who care to pay fifteen cents for mailing charges. No charge being made for the book. A valuable book for reference.

Disease and Its Causes, by W. T. Councilman, M. D., L. L. D., professor of Pathology, Howard University. Published by Henry Holt & Co., New York. Price 50c.

One of a series of treatises on scientific subjects issued for public use. Herein the author portrays disease as life under unusual conditions. A very valuable book for the laity, written by a recognized authority in a pleasing and convincing manner. A book you can safely recommend.

Practical Medicine Series. Gynecology, edited by Emilius C. Dudley, A. M., M. D., and Herbert M. Stoue, M. D., Chicago. Vol 4, Series of 1913. Price \$1.35. \$10.00 per year. Year Book Publishers, 327 South La Salle Street, Chicago.

A complete and thorough review of the literature on gynecology for the past year, presented in a style convenient for ready reference, well tabulated and well indexed.

Obstetrics, Vol. 7 of the Practical Medicine Series for 1913, edited by Joseph B. De Lee, A. M., M.D., with the collaboration of Herbert M. Stowe, M. D., Chicago. Price \$1.35. Year Book Publishers, Chicago, Ill.

The table of contents shows how thoroughly the year's literature on obstetrics has been studied in the preparation of this volume. Unless you take and read many journals, you will need such review work as are there herewith presented. Here is presented for rapid and easy survey the up-to-the-minute literature.

The Practitioner's Visiting List for 1914. An invaluable pocket-sized book containing memoranda and data important for every physician, and ruled blanks for recording every detail of practice.

The Weekly, Monthly and 30-Patient Perpetual contains 32 pages of data and 160 pages of classified blanks. The 60-Patient Perpetual consists of 260 pages of blanks alone. Each in one wallet-shaped book, bound in flexible leather, with flap and pocket, pencil with rubber, and calendar for two years. Price by mail, to any address, \$1.25. Thumb letter index, 25c extra. Descriptive circular showing several styles sent on request. Lea & Febiger, Publishers, Philadelphia and New York.

OBITUARY.

Dr. Lyman Hall, of Springfield, a member of the Iowa State Medical Society, died of apoplexy in Albuquerque, New Mexico, December 4, 1913.

Dr. W. W. Kerlin, the oldest practitioner in Buena Vista Co., died at his home in Storm Lake Wednesday Dec. 10th. The remains were conveyed to Lena, Ill., his old home for interment. Dr. Kerlin was a graduate of the Pennsylvania Medical College, class 1857 and graduate

of Rush class 1884 and has been engaged in the practice of Medicine since the age of twenty one.

Dr. Kerlin stood high among professional men and was greatly beloved by the entire community in which he lived.

"How he lies in his rights if a man!
 Death has done all death can
 And absorbed in the new life he leads,
 He recks not, he heeds
 Nor his wrong nor mens vengeance: both strike
 On his senses alike,
 And are lost in the solemn and strange
 Surprise of the change."

Dr. O'Donoghue,
 Pres. of Buena Vista Co. Med. So.

SOCIETY NOTES.

Winter meeting of the Iowa and Illinois Central District Medical Association met at Hotel Kimball, Davenport, Thursday, January the eighth at eight p. m.

Officers: President, P. A. Bendixen, Davenport; vice-president, F. H. Gardner, Moline; secretary, L. W. Littig, Davenport; treasurer, F. H. First, Rock Island.

Program:—1. Clinical Cases, 5 minutes. 2. Minor Points on Pre- and Post-operative Treatment, F. J. Otis, Moline. Discussion opened by W. D. Chapman, Silvis and J. T. Haller, Davenport. 3. Headaches, Hugh T. Patrick, Chicago. Discussion opened by G. W. Banning, Davenport and J. F. Murphy, Geneseo. 4. Otitis Media, G. F. Harkness, Davenport. Discussion opened by L. Ostrom, Rock Island and J. V. Littig, Davenport. 5. Buffet Lunch.

The Washington County Society met at the Washington County Hospital Dec. 16, at 2 p. m. Members present were Drs. M. C. Terry, W. S. Parks, R. A. McGuire of Brighton; W. H. McCaw of Winfield; S. Dings of Keota; J. G. Henderson of West Chester; J. M. Chittum of Richmond; A. J. Laird and W. L. Alcorn of Ainsworth; S. W. Huston of Crawfordsville; C. A. Boice, J. C. Boice, E. R. Jenkins, G. W. Hay, C. W. Stewart, C. W. McLaughlin, E. J. Perry, John Masson of Washington.

Dr. Alcorn read a paper on lobar pneumonia; Dr. W. L. Allen of Davenport presented the subject:—When do hypertrophical prostates require operation; Dr. E. J. Perry discussed the diseases of the antrum of Highmore. All the papers were generally discussed.

Officers for 1914 are M. C. Terry, president; H. C. Hull vice-president; C. A. Boice secretary and treasurer. Dr. J. E. Edgington was elected to membership.

Henry County Society met Thursday, December 18, at Mt. Pleasant.

Program—1:30 P. M.

The Medical vs. the Surgical Treatment of Appendicitis, Dr. H. J. Gilfillan, Mt. Pleasant.

Anaphylaxis and Its Relation to Immunity and Disease, Dr. Johannes Hermanies, Mt. Pleasant.

Broncho-Pneumonia, Dr. W. A. Sternberg, Mt. Pleasant.

The following officers were elected for 1914:—president, D. C. McCönnaughey, Wayland, vice-president, L. B. Allen, Mt. Pleasant, secy.-treas., O. A. Geeseka, Mt. Pleasant, delegate, C. F. Applegate, Mt. Pleasant.

ant, member Board of Censors, F. R. Mehler, New London. Dr. John Hermanies and Dr. Clara S. Eirley, both of Mt. Pleasant were elected to membership in the Society. The next meeting will be held on the second Thursday of next May at Winfield.

The officers elected at the annual meeting of the **Allamakee County Society** for 1914 are as follows:—President, Dr. J. C. Crawford, Waukon; vice-president, Dr. A. A. Schmidt, Postville; secy.-treas., Dr. C. W. Rominger, Waukon; delegate to State House of Delegates, Dr. P. H. Letourneau, Waukon, alternate, Dr. O. O. Svebakken.

The Thirty-eighth Annual Meeting of the Southeastern Iowa Medical Society was held Thursday, November 20 in Burlington.

Scientific Program.

President's address—The Relation of Medical Science to Civilization. Dr. S. K. Davis, Libertyville.

A Case of Gangrene of the Foot from General Arteriosclerosis—Dr. E. H. King, Muscatine.

Report of a Case of Appendicitis or Calculus, Which?—Dr. J. H. Chittum, Wapello.

Some Medical Economics—Dr. H. B. Young, Burlington.

Three, Important, Neglected Conditions—Dr. D. C. Brockman, Ottumwa.

Some Common Errors in Gall-Tract Surgery—Dr. C. E. Ruth, Des Moines.

Vagatonia—Dr. L. W. Littig, Davenport.

Some of the Reasons Why People Are Growing More Nervous—Dr. C. F. Applegate, Mt. Pleasant.

Pyelitis—Dr. Murdock Bannister, Ottumwa.

Intestinal Stasis—Its Medical Phases—Dr. Charles Stephen James, Centerville.

Extra Uterine Gestation—Dr. C. R. Armentrout, Keokuk.

Congenital Facial Defects—Dr. J. F. Herrick, Ottumwa.

Pyosalpinx—Dr. J. S. Gaumer, Fairfield.

The Polk County Society met Tuesday, December 23, at 6:30 p. m., in the Savery Hotel.

Program.

Annual banquet 6:30 p. m.

A New Point of View of Nephritis and its Treatment—Dr. J. F. Perry, Galesburg, Ill.

Literary (non-scientific) program.

Election of officers.

The banquet was without additional expense to the members who were especially urged to be present for the enjoyment of a delightful evening.

Dr. Granville Ryan was elected president for 1914. Drs. Duhigg and Mountain were re-elected secretary and treasurer respectively.

The Des Moines Pathological Society met Friday, December 12 at the Chamberlain Hotel.

Program.

The Causes of Crisis in Pneumonia—Dr. Ludwig Hektoen, Professor of Pathology, University of Chicago.

Dinner was served at 6:30 p. m.

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No. 8

BRAIN INJURY, ITS RESULTS*

GEORGE KESSEL, A. B., M. D., Cresco.

The brain is the center of conscious existence. The spinal cord has no such function. This center of conscious existence marks the chief difference of the one from the other. It also marks the chief difference between the human brain and the brain of the rest of the animal world.

The brain is also the chief center of intelligence, varying as the intelligence of the different individuals varies, depending much upon inheritance, social and intellectual environment, education, and that greatest of all forces we call "will power"—that power which urges the mind further and further forward on the road to intellectual achievement. The brain, therefore, when figured in terms of mental value, is not a fixed quantity or quality.

On the other hand, the spinal cord is nearly a fixed quantity and quality because it contains the centers which preside over the functions of the nutritive organs of the animal economy. In other words, the spinal cord centers preside over the organic functions which maintain physical life, and therefore cannot vary much in different individuals, and are not subject to educational development. Stated in forms of a definition it may be said that the spinal cord is the fundamental and essential part of the nervous axis. The brain is the accidental part, depending on the uses it is put to. Injuries, therefore, of the brain, when figured in terms of mental value, differ very widely in different individuals.

Injuries of the same nature, and same extent, of different brains will differ in their resulting values as the development of the injured brains differs. Even a slight injury to a highly developed brain,

*Read before the Iowa State Medical Society, 1913.

so slight that it may cause only momentary loss of consciousness, may months or years afterward, result in epilepsy or some other form of serious mental damage.

Head injuries naturally fall into two chief divisions:—(1) injuries of the tissues which compose the scalp, and (2) injuries of the cranial bones.

Injuries of the scalp, under the present day aseptic management, become unimportant and may be passed over without discussion. Injuries of the cranium itself when considered as injuries only, also are of little importance unless they result in fractures.

Fractures.

Fractures of the skull, for convenience sake, may be classified according to their anatomical situation as (1) fractures of the base, (2) fractures of the vault, or (3) a combination of the two. These again may be divided into all the clinical varieties as fractures in any of the other bones are divided.

The anatomical division of base and vault fractures is the most important because of the difference of the mechanism of their production and the difference in their resulting forms and complications. The bones of the vault are exposed to direct assault, and therefore subject to extensive destruction and displacement of the fragments, and to complicating injuries of the brain substance. The base of the skull, although more fragile than the vault, being well protected against direct assault, is therefore not subject to extensive fragmentation and displacement. Base fractures are usually linear in form and the parts maintain their position fairly well. Skull injuries in adult life are usually the result of direct force and are more common in the hazardous occupations. These injuries of adult life are much written about, and freely discussed in our surgical literature. There is a form of injury, however, in early childhood on which reliable literature is scarce, especially birth injuries.

Birth Injuries.

“Possibly one of the most common forms of injuries which leads ultimately to epilepsy is that which is incidental to parturition—the birth palsies; sixty per cent of them, according to Gowers, are followed sooner or later by this complication, and when we consider that the cases which later on are recognizable as Little’s disease represent necessarily a serious and wide spread lesion, and that presumably an enormous number of infants receive at birth some trifling cerebral injury which, from lack of symptoms, is overlooked. May it not be that many cases of so-called idiopathic epilepsy dating from childhood can be safely attributed to the effects of early traumatism”? (Cushing)

And then again it would be interesting to know how far the falls and bumps, which infants receive in these early years, lead in later life to epilepsy and other serious brain neuroses.

In fractures of the skull it is important to keep separate the

symptoms or signs of fracture from the symptoms and signs of intracranial complications. Brain symptoms, such as slow pulse, high blood pressure, loss of consciousness, irregular pupils, should not be enumerated as symptoms or signs of fracture because all these may exist without fracture. The injury is the common cause; the resulting fractures and brain lesions are independent of each other. The exception to the rule is, where the brain tissue, or some important vessel, is extensively lacerated by penetrating pieces of the skull.

Diagnosis.

Fractures of the vault can be diagnosed by the sense of sight and touch. If in doubt as to the existence of a fracture, make a free incision in the scalp and examine the bones carefully. Under careful asepsis this will do no harm. Sometimes a fracture may exist which cannot be seen or felt; in such cases, and when there are no decisive symptoms, treat them expectantly.

Fractures of the base can be diagnosed by the symptoms only, which are as follows:

(1) Hemorrhage. This may become visible on the surface and the source may be from the diploë, meninges, or brain, and may escape from the ear, nose, mouth, or appear subcutaneously in the eye or soft tissues over the mastoid. Of these the most frequent and important is hemorrhage from the ear. "As a positive sign it may be considered pathognomonic of fracture of the petrous portion of the temporal bone, involving the internal auditory passage and followed by rupture of the tympanum from pressure of extravasated blood". (Phelps).

Subconjunctival and subcutaneous hemorrhage, with orbital ecchymoses, which appear immediately after the injury may be considered a part of the local contusion. But if these signs appear slowly after several hours, or after one or more days, without cutaneous ecchymoses, then fracture of the base, involving the orbital wall, must be assumed.

(2) Hematemesis always indicates cranial fracture, involving the osseous wall of the pharynx. A mastoid ecchymosis is nearly always a sure sign of basal fracture. Aside from the hemorrhage the signs of basal fracture are few and inconclusive. A serous discharge from the ear may be of great value in determining a basal fracture when the discharge is clearly cerebrospinal fluid, or the serous effusion of an acute arachnitis. A more positive sign of basal fracture is escape of brain matter from the ear or nose. It is of interest to know that such escape of brain tissue in basal fracture is not necessarily more fatal than escape of brain tissue in vault fractures. Cases are on record of complete recovery after such accidents.

(3.) Implication of cranial nerves in basal fracture may be mentioned as occurring occasionally, but not often enough to be of much value in the diagnosis. It must be remembered also that basal

fractures may exist without any diagnostic symptoms whatever, and on the other hand many and severe symptoms may present themselves without any fracture at all.

It must be remembered that the brain has little, if any, power of repair. There are no lymphatic glands, and no true lymphatic vessels in the brain. The only channels for the lymph stream are the peri-vascular spaces. There are lesions which are the sequence of trauma not associated with fracture, not even associated with unconsciousness; and they are subdural hemorrhages which result in the formation of encapsulated cysts. These gradually produce increasing effusion, and increasing irritation, and finally the patient commences to show, if not convulsions, at least mental changes which finally land him in an asylum. All this may occur without any depressed fracture, or anything more than a contusion or concussion. (Murphy) All this happens because, as before stated, the imperfect brain cannot take care of the original blood clot. To go a step further in the pathological process, these encapsulated cysts may become encapsulated abscesses should they be infected by some pathogenic germ.

Injury Without Fracture.

What about the injuries of the head where no demonstrable lesions exist? What about the so-called slight injuries? The symptoms of these cases may be divided into immediate and late symptoms. The symptoms that usually follow brain injuries are headache, attack of vertigo, epileptic convulsions, and a great variety of brain neuroses. These symptoms do not come on immediately, or even early after the injury. They usually come on months or years afterward. The following is an illustrative case.

Mr. B. a farmer, aged 45 years, of good family and personal history, received a slight wound over the left eye and forehead by a fall in his barn 8 years ago. There was no evidence at the time of fracture of the skull. There was, however, momentary loss of consciousness. The small scalp wound healed kindly and the man was perfectly well until December 1912. At this time, while he was doing some light chores, suddenly his tongue failed him and he was unable to utter a single word aloud for a period of three weeks. He could write and understand words but not vocalize them. Up to the present time he has slowly improved, so much so that one can understand very well what he says. He speaks, however, very slowly and with difficulty. He says that his brain feels dull and that his memory is very poor. There is no evidence of any other disease. His blood pressure is normal, and there is no arteriosclerosis.

Dr. Dudley Allen, of Cleveland, Ohio, analyzed a large number of cases of skull injuries without penetration of the dura and most of the cases found their way to the hospital for the insane eventually.

"The important thing in every head injury, whether it is a

compound fracture, or a simple fracture, or whether it is a concussion of sufficient severity to produce unconsciousness, all centers around the fact whether the patient is subsequently going to have epilepsy, or whether he is subsequently going to have those epileptic convulsions and finally become a victim for the asylum. That is the important point.

The injury received does not need to be a hammer blow; it can be any blow on the head that produces unconsciousness. For a long time we believed that the Jacksonian type of epilepsy was the sequence of a compound fracture, and rarely ever the sequence of a concussion. We are now learning that a concussion very frequently results many years later in epilepsy, and that led the late Dr. Fenger, who was the father of it, to adopt a treatment which he felt would obviate the ultimate epileptic convulsions". (Murphy)

Loss of consciousness, even momentary in duration, is of great importance in brain injury. Dr. J. B. Murphy says, "rather than be rendered unconscious by a blow on the head I would prefer to die—so much fear have I of the secondary lesions that occur in connection with these injuries".

There are two conditions which may be considered almost laws, so regular are they in their results. (1) Injuries to the head, whether they produce fractures or not, which do not cause loss of consciousness, are rarely ever followed by epileptic convulsions. (2) Injuries to the brain, whether they produce fractures or not, but which do cause a loss of consciousness, very frequently are followed by epileptic convulsions in after years. Therefore the epileptic phase is the most important phase of every head injury. The danger to life from the fracture is not the most serious of the head injuries. The danger to be feared most is the danger of resulting epilepsy during subsequent years; and when epilepsy has once developed the patient is doomed.

Diagnosis.

"Any case of cranial injury which results in concussion must be given a guarded prognosis, not only to the immediate outcome, but also as to the final restoration of normal cerebral activity". (Cushing)

The immediate results of brain fracture are generally good if the treatment is prompt and intelligent. The danger of the fracture, whether of vault or base, is the damage that is inflicted on the brain tissues, including the venous sinuses, large vessels, and important nerve centers. In making a definite prognosis it is of great importance to keep separate, as before stated, the injuries of the cranial bones, and the injuries of the cranial contents. They are not complications, but rather coexistent results of a common cause. Contrary to the common conception, vault fractures are more serious than base fractures in so far as the mere fracture is concerned. (Sharpe) Prognosis cannot be based on the extent of

the injuries visible even. A small linear fracture of the base permitting hemorrhage into the pons or medulla may kill quickly. A large fracture of the vault permitting considerable expansion of the brain is really in the nature of a decompression operation.

"Management of skull injuries—of the concussions that render patients unconscious, of the contusions with depression of the skull, and of the depressed fractures of the skull, and of fractures of the skull at the base—is one of the dark chapters in surgery—dark so far as the ultimate outcome is concerned—and one of the bright chapters in surgery so far as the immediate effect is concerned. That is, patients may have very severe injuries, compound fractures, and comminuted fractures, with the escape of large quantities of brain tissue, with the skull fragments driven down into the brain for an inch and one half, and the patients may recover immediately from the accident and remain well for a long period of time". (Murphy) But do not congratulate yourself over much on these immediate results, for the end is not yet.

I think Dr. Fenger's teachings concerning the management of brain injuries, no matter how trivial, should be emphasized at this time. He taught us that any person who has been injured sufficiently to render him unconscious should be put to bed with an ice bag on his head, and kept in bed six weeks regardless of what his symptoms are. This is simply the rest cure applied to the injured cerebral tissues and meninges so as to give them an opportunity to return to the normal state with the least deposit of connective tissue. Further than this little can be said concerning the treatment of these unfortunate cases.

If someone else, in the discussion of this paper, cares to take up the subject of the surgical treatment for the late symptoms of brain injury, he has my permission to do so. As for me, I have little faith in it.

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Discussion

Dr. Max E. Witte, Clarinda: I am interested in this subject particularly, as I have had occasion to see the results of a large number of injuries, at one time or another, and have no inconsiderable experience as to the results of treatment. My conclusion, based on this experience, is simply this: if there is an injury to the brain which requires interference surgically, the thing to do is to do it at once, and not put the patient off, in the hope that the Powers that be may be favorable, and there will be no evil results. If you wait for months and years, until untoward troubles appear, when local irritations from compressed particles of the skull, or adhesions, or abnormalities otherwise produce changes, set up vexations neurotic habits, surgical interference is too late and useless. Whatever ought to be done, should be done promptly and early. I have seen some good results from what appeared to be grave injuries to the brain, by prompt surgical reparative work, only followed by a temporary disorder

which was afterwards cured. But when time has gone by and chronic changes have been set up, neither the surgeon or anything else can bring back a disordered mentality from disturbances originating from injuries to the brain.

A. L. Wright, Carroll: There is one point about brain injuries I would like to mention probably a little more fully than was discussed by the author of the paper, and that is, injuries to the brain without a fracture. These are the kind of injuries that lead to disastrous results in years afterwards, and are the ones which are particularly difficult in a medico-legal sense. A man having received an injury to the head, brings an action against the corporation or individual in consequence of this injury. There is much difference of opinion among the physicians and surgeons who are brought to testify as to what the immediate or remote result of this injury may be.

In the matter of getting at the basis for a proper understanding of these injuries, we may say, that we have a concussion, which may lead to certain pathological results. There is much difference of opinion as to what constitutes concussion. If we have a mere shaking up of the skull, we term it concussion and leave it there. But where we get a contusion, or a laceration of the brain substance, which produces possibly immediate unconsciousness, followed often by a slow pulse, and possibly a normal temperature, with a certain amount of psychical disturbances, we have then the symptoms of something more than a mere concussion. We have then an indication of contusion or laceration of the brain substance itself. We know, in this class of cases we may have deleterious results following two or three years afterwards. We may have epilepsy, cerebral abscess, or insanity.

Recently we have had some litigation in which these cases were under discussion by the attorneys and experts on the witness stand. There seems to be no settled opinion or uniform knowledge among physicians as to what classification of injuries are of a serious nature and which are not associated with fractures.

Dr. E. J. Waddey, Waterloo: I want to take a moment to rehearse a case I saw recently. A man was out hunting and was struck by somebody else he met, with whom he got into an altercation, by the butt of a gun, while the fellow was stooping down, he was hit, as I understand it, with the knob that is on the lock of some make of guns. As near as I could locate it, it knocked out a piece of the skull on the front and side, which was about the size of a nickel or dime. We took out that piece of bone which left a place for drainage, there was a sinus which ran along the frontal edge and apparently down as far as the base. He had hemorrhages from the nose, mouth and ear. He made an absolutely uninterrupted recovery and apparently is now uninterfered with mentally. He was, however, moved a little bit earlier than I should have advised. I was not consulted. It was not my own case. I assisted in the interest of the man who hit him. The surgeon who had charge of him evidently did not pay any attention to what Fenger tried to teach us. I might say, he lost considerable brain tissue.

GLAUCOMA*

W. W. PEARSON, M. D., Des Moines.

Glaucoma is such an important disease among eye troubles that no apology in presenting this subject is necessary.

It receives its name, as you know, from the Greek, because of the green pupillary reflex. We must bear in mind, however, that the same reflex is present in eyes having opacities in the refracting media, so that the color is not typical of this disease.

Before v-Graefe discovered the ophthalmoscope all types of blindness due to intro-bulbar disease was classed practically as one. Julius Jacobson, in 1853, was the first to mention the ophthalmoscope in a dissertation on this subject, but he overlooked the change in the optic papilla. He said that glaucoma was characterized by the green pupillary reflex, and added that the same might result from different diseases of choroid, the retina, and the vitreous, so that glaucoma was not to be considered as a well defined and characteristic disease. To Edward Jaeger belongs the honor, in the following year, of describing the change in the optic nerve.

v-Graefe, about the same time, described the ring about the optic papilla as being prominent instead of the nerve being staphyломatous. He at this time described the spontaneous pulsation of the retinal artery and showed how the same pulsation might be produced by pressure on the globe.

In his second publication on this subject the following year, 1855, he first called attention to the increased intraocular pressure with the resulting changes. The hard globe, anesthesia of the cornea, paralysis of the iris, arterial pulsation and loss of vision, through the characteristic contraction of the visual field, and he also decided the nerve head was concave instead of convex, so we must credit v-Graefe with being the first to have a full detailed conception of the disease.

In a recent monograph on glaucoma, Walter Löchlein, of Griefswald, begins by saying, "There is scarcely another disease in the entire pathology of the eye that is as rich in riddles, theories, and especially deceptions as is glaucoma. Rich in deception not only in so far as we today, in spite of v-Graefe's iridectomy and the introduction of the miotics by v-Lagneur and Ad Weber, we are still helpless in the treatments of a large number of these cases, but also rich in deceptions because, notwithstanding the great amount of work during the last decade, no recognized cause has been advanced to explain all of the many forms of this disease."

First, we may divide glaucoma into primary and secondary;

The first we define as a disease resulting from the sudden or gradual increased intraocular tension, constant or remitting, leading to a transitory or permanent injury to the eye.

*Read before the Iowa State Medical Society, 1913.

Secondary glaucoma we may define as the above, following some recognized disease change or toxic influence leading to an obstruction of the filtration angle, as synechia, occluded pupil, hypersecretion from a serous iritis, swelling of a traumatic cataract, dislocation of the lens, intraocular tumor, hemorrhagic glaucoma, etc.

One type which has been worked out recently, especially by Fuchs, results from cystic formation in the anterior chamber, having its origin in the delayed union of an incision in the cornea; the epithelium rounding the margin of the incision and continuing to grow within the anterior chamber and so obstructs the filtration angle. This division of the disease has been better handled because, the etiology being apparent, it has been more easily combated.

Primary or simple glaucoma will be the subject to which I shall from now on direct your attention. It may be divided clinically into three forms, acute inflammatory, chronic inflammatory, and simple. Three symptoms are common to all; increased intraocular tension, glaucomatous excavation of the optic nerve, and blindness.

Primary glaucoma is a comparatively common disease. According to Fuchs it comprises one per cent of all eye diseases. It is the duty of all physicians to have it in mind as, in the simple form, its onset is so insidious and, in the inflammatory form, the symptoms may be so complex as to direct the attending physician's attention to other organs.

As an example of the form I may mention the case of a gentleman from a neighboring city, who called on me a few weeks since, with the statement that he had been told he had a cataract in one eye and had been advised to let it rest until later, when it might be removed. The vision of the other eye being perfect he was in no hurry to consider the care of the blind eye. The same old story; the vision of the eye was entirely gone while, fortunately, the other eye was practically standard.

As an example of the other, I recall the history of a patient, a resident of Des Moines, who was lead into my office about two years since. She had been attacked about six weeks prior to the call with a severe pain about the eyes and most intense paroxysms of vomiting. Her physician was called and treated the latter symptom, and advised her that she need not worry about the eyes as she might call on an oculist later, after she had recovered. When she called her vision was entirely lost. She assured me that her vision was good previous to the attack; that on the evening before, while standing at the street car waiting room, she had noted the time on the postoffice clock, one block distant.

The workers along this line today are endeavoring to anticipate the glaucomatous tendency. The introduction of the tonometer by Schiötz has awakened new interest in this subject. Schoenberg of New York, has recently employed this instrument in a number of experiments by taking the eye tension and permitting the instru-

ment to rest on the eye for from ten to perhaps one hundred seconds. He found that the tension, as the result of the continued pressure of the weight on the glaucomatous eye, remained practically the same, while that on the eye with the non-glaucomatous tendency gradually decreased. He concluded that the degree of intraocular pressure depends in a great measure on the integrity of the drainage system of the eye, and that the rate of the ocular drainage is of more importance than the simple measurement of the intraocular pressure. He hopes to be able to demonstrate that some eyes, with apparently normal tension, in the incipient or prodromal stage of glaucoma, may reveal this interference with drainage by his method. It is early to draw a conclusion but it will be watched with considerable interest.

Most observers today are united in the opinion that all forms of glaucoma and the resulting changes are due to an increase of the intraocular tension. At first many, among whom was v-Graefe himself, considered simple glaucoma as blindness with posterior staphyloma. They did not regard it as having a common cause with acute and chronic inflammatory glaucoma. An early investigator discovered a certain vacuolation in the optic nerve of simple glaucomatous eyes, and for a time some believed that this form of the disease had its origin primarily in the nerve. Later the same histological findings were discovered in nerves from highly myopic eyes. Experimentally v-Hippel developed the same changes in the nerve of a dog's eye after injecting material in the anterior chamber that obstructed the filtration angle. Jaeger held this theory to the last. Among others Schnabel believed this condition developed only in primary glaucoma.

As mentioned above, in the quotation from Löhlein, we are still in the dark as to the etiology of this entire process. Time does not permit me to enumerate the different theories, but we are justified, I believe, in assuming that the whole glaucomatous process has a common cause, and the different types are merely the result of the different degrees of intensity of the same process.

The increased intraocular pressure first brings about a disturbance of the circulation of the blood in the eye, resulting in a venous stasis. The veins in the anterior segment of the eye are compressed and because of the oblique course taken by the vena vorticiosa leaving the interior of the eye they are early compressed, and as a result the blood from the eye must leave through the anterior ciliary veins. This results in their dilation, which is so characteristic in the old glaucomatous eye. In the simple case this obstruction is evidenced by the distension of the anterior ciliary veins and the ophthalmoscope reveals a distension of the retinal veins. When this obstruction comes on suddenly an inflammatory edema results. It is characterized by hyperanemia of the diseased eye and marked swelling due to the serious infiltration. This process differs from

other inflammation in that it clears immediately following the reduction of the tension. The edema of the cornea is indicated by the haze; the edema of the iris is manifested by the obliteration of its details. It is crowded forward by the swollen ciliary process and farther tends to prevent the natural drainage. There is at this time a hyperanemia of the papilla which is also somewhat edematous. The depression of the papilla is a direct result of the pressure. It is possible that a difference in the resisting power of the lamina leads to great degrees of difference in the staphylomatous process, especially in simple glaucoma. The violent pain is the result of the pressure involving the sensory nerves distributed to the iris and ciliary body.

The loss of vision may be attributed directly to the retinal disturbances resulting from the pressure. That portion of the retina with its circulation furthest removed from the optic entrance, as a rule suffers first, hence the characteristic contraction of the nasal field. If the process is a severe one we can readily understand how following each attack a certain amount of the vision is lost.

It is well to remember, however, that in simple glaucoma the color fields are more or less retained, while in primary optic nerve atrophy these are lost. It is interesting to recall that some observers have demonstrated cases of simple glaucoma which at times have had abnormally low intraocular tension. It is conceded, however, that the glaucoma changes have taken place in these eyes during the time when the tension was increased.

While I do not wish to bore you with long detailed case histories, the following two cases serve to emphasize the difference between the simple and inflammatory types of this disease. The first is that of a lady about forty-five years of age, whom I saw twelve years since. The vision of one eye was entirely gone, while that of the other was standard. I prescribed the miotic treatment and she did well for about two years. The blind eye became so painful, following an added inflammatory attack, that I removed it. The better eye at this time still retained its normal vision. Five years later she called on me because of certain threatening symptoms about the remaining eye. She had had no outspoken inflammatory attack but had seen the rainbows about the light, with hazy vision at times, and there was a certain uneasiness about the eye which she had experienced about the other eye before its loss. The field of vision was very slightly impaired and central vision with the refraction correction was standard. I recommended the surgical treatment, that of iridectomy. This was carried out and the miotic treatment continued. At the time of the last examination about one year since, the vision was standard.

The second case was that of a resident of this city, a lady fifty-three years of age. About ten years since, because of the promonitory symptoms of glaucoma, consisting of irregular, hazy vision

during the morning hours, the colors about lights at night, and a certain uneasiness, she called on a well known oculist in New York City. He was absent from his office so the patient saw his assistant. According to her statement he discovered nothing suggestive of disease. She left New York that evening for Des Moines. When she reached Buffalo she suffered an attack of the fulminating type of glaucoma. She continued on the train to St. Louis where she was removed to a hospital and both eyes operated on. I saw her about one week later when she returned to Des Moines. The vision of one eye was bare perception of light, while that of the other was practically standard, with a correcting lens. The miotic treatment was kept up for several months. I had the opportunity of examining this eye again within the past year and found the glaucomatous process had been checked, the vision continuing the same.

These two cases illustrate the extremes in this connection. It is possible to have a case manifesting any degree of severity between these extremes. The simple type may be converted into the inflammatory at any time.

The treatment, as you all know, is either that of miotics or operative, and many believe in the combination of the two. The profession is not united as to the best treatment of the simple form. We are all more or less familiar with Dr. Posey's miotic treatment and the long series of cases which he presented a few years since at the Chicago meeting of the American Medical Association. Most oculists are united in their recommendation of iridectomy or a trephine operation for the relief of tension in all inflammatory types of this trouble. The Lagrange operation and its modifications promises much. However, it is too early to pass judgment on the permanency of the result following this type of operation. It is interesting to note Dr. Fisher's colloid theory and his recommendation that a five per cent solution of sodium potassium tartrate and sodium citrate be employed as a subconjunctival injection. Happe, in employing this treatment, noted great pain and an increase of the tension, and warned against its employment. The action of these salts on the living eye, with its circulation and nervous action, is not to be compared with that on an enucleated eye as Dr. Fisher demonstrates it.

Because of the action of light in contracting the pupil, a Scandinavian author recently recommended a well lighted room for the glaucoma sufferer.

CARE AND TREATMENT OF TUBERCULAR INSANE

ROSE A. RUSSELL, M. D., Cherokee, Iowa.

The problem which here presents itself for our consideration is one of most importance, for as tuberculosis is everywhere a menacing factor to the life of the ordinary community, it is doubly so to the institutional community.

Pulmonary tuberculosis, through the very nature of the disease, is rarely diagnosed in a stage of incipiency. The clinical manifestations and the early symptoms are so varied that it is rare that an individual presents himself for examination in the early stages of the disease. The histories of many cases often go to show that the individuals have had symptoms for longer or shorter periods of time, sometimes up to several years, which, once the diagnosis of tuberculosis has been confirmed, point unmistakably to the beginning of the trouble; there has been a general condition of malaise, fatigue, some slight variation in weight if not an absolute loss, indifference to business or social life, and various other slight but perceptible changes in the characteristics normal to the individual. These have been entirely overlooked, or undervalued, or assigned to some other causative factor.

Thus it is a tubercular lesion may be quite well advanced, when, through a combination of factors known or otherwise, there is a mental break-down, and the individual is a subject for treatment in the institutions devoted to the care of the insane.

He is admitted to the psychopathic hospital, and there under constant observation and repeated examinations he is positively diagnosed as tubercular.

His case may come under any one of the following heads: (1) An "open" tuberculosis, i. e. tubercle bacilli may be positively demonstrated in the sputum; or (2) a "closed" tuberculosis, i. e., no tubercle bacilli are found in the sputum. Such cases are chiefly incipient and most favorable to treatment. Or, finally, the case may be one of (3) "inactive" tuberculosis—cases which show no elevation of temperature or other symptoms, but physical examination reveals healed or arrested tubercular foci.

It is, therefore, incumbent upon the institution to protect the non-tubercular as well as to care for the infected patients. Segregation and isolation suggest themselves as essential. They are not always easy to work out. Every means at hand must be used to bring about this desirable end. Every tuberculous patient, running a temperature must be put to bed. All who are coughing and expectorating must be provided with some safe means of collecting the sputum in order that it may be destroyed. Constant care and watchfulness on the part of the attendants and physicians are de-

manded to maintain a measurable degree of cleanliness of the person and dress of the patients.

So much has been written on the general management of pulmonary tuberculosis, there is no new theory to advance. The consensus of opinion appears to be in favor of every means and method whereby the body resistance to the tubercle bacillus may be raised.

To this end good nourishing food, easily digested and wholesome, fresh air, sunshine, rest,—relative or absolute—are commensurate. In fact, the treatment is “of the individual and not of the disease.” The treatment “must be a strenuous and exacting one, both on the part of the physician and the patient”.

“Benefit”, says Osler, “is usually a matter of months, of complete arrest a matter of years; absolute cure a matter of many years.”

Wm. Ewart, writing in *Progressive Medicine*, for September, 1913, says the medical treatment of phthisis resolves itself into but two forms, viz; the specific and non-specific.

The specific is by tuberculin.

The non-specific is by the general hygienic-dietetic methods of the sanatorium or open air treatment. A combination of both seems to approach the ideal.

Since the introduction of tuberculin as a specific treatment for tuberculosis by Robert Koch in 1890, there has been no time when it has not had its staunch advocates, though its history has been one of wave-like popularity. Just now the tendency appears to be one of increasing favor toward the method.

Among many men in the United States who have had extensive experience in the use of tuberculin, perhaps there are no two who have so constantly or for so long a time used the treatment, as Trudeau and Pottenger. Trudeau says, “My experience with tuberculin treatment at the sanitarium thus far has led me to believe that when carefully applied in suitable cases, it has proved apparently free from danger and it has seemed to have some favorable influence in bringing about healing of the lesions.”

Pottenger says, “Tuberculin can produce a varying degree of good results, also a varying degree of harmful results, according to the method of its administration. Tuberculin has only a specific action against the tubercle bacillus and its toxins. It can not cure mixed infections, nor can it prevent the deleterious effects resulting from enzymes and the products of their action.”

The benefit to be derived from the administration of tuberculin is based on the theory that it stimulates the body cells by its toxins to produce anti-bodies, thus fortifying the body against the infecting agent.

It is also thought that tuberculin causes a local hyperemia about the focus of infection, thus enabling the anti-bodies to more

easily reach the bacilli, which, possibly, may stimulate the cells to the formation of fibrous tissue.

This process of immunization by tuberculin may be brought about by one of two methods: (a) by large doses pushed to tolerance; (b) by small doses at regular stated intervals and extending over long periods of time. The consensus of opinion seems to favor the repeated small dose. Trudeau begins with a very small dose and after three or four days a slightly increased dose is given and so on, the increase being so gradual as to cause no reaction whatever. Pottenger points out that the small dose given at infrequent intervals is very likely to produce a hypersensibility which interferes with the further use of tuberculin. He lays stress on the size of the initial dose as modified by the nature of the lesion, i. e., a small dose is given in an active form of the disease, and a larger dose in a quiescent case, and similarly in an early case or a more advanced one. Also a small dose is administered to a nervous patient and a larger one to a phlegmatic individual.

The dose of tuberculin is also modified by other factors such as (1) character and location of the lesion, (2) individual susceptibility, (3) whether the patient is in institution and under observation, or otherwise, (4) whether he is at work or at rest, (5) whether there are accompanying complications such as hemorrhages, colds, influenza or menstruation.

The small dose is repeated at short intervals, say after one or two days, and increased rapidly for four or five doses and the succeeding doses regulated by the patient's reaction. Observing these rules, Pottenger says he has had no case of hypersensibility develop for the past four years.

Fever was formerly considered a contraindication to the use of tuberculin but at the present time the weight of opinion is favorable to its use.

Fever in tuberculosis is dependent upon so many causes other than tubercle toxin, such as over-exertion, anxiety or mental excitement, a toxemia resulting from an over-loaded bowel, or intercurrent infections such as influenza, pneumonia, etc., that one is not justified in withholding the treatment on that account. Furthermore the theory that fever indicates the saturation of the body already with tubercle toxins is not well founded.

It has been pointed out that if the body were already surcharged with toxins, the reactive power would be overcome and the temperature would drop. A temperature therefore, up to 101° or even higher is not forbidding to the use of tuberculin, though, the treatment of fever patients requires very careful study and close observation.

It has been observed by those most experienced in its use that if the treatment is well borne and doing good, it is manifested in lowered fever, increased appetite, arrest or diminished night-sweats,

lessened cough and expectoration, often by the disappearance of the bacilli from the sputum, and increase in weight.

As has been said before in this paper the specific treatment is best carried out in conjunction with the sanitarium or open-air method. By this means it is possible to segregate and isolate our tubercular insane and at the same time secure for them an approximately perfect environment considered from the sanitary and hygienic point of view. Sanitarium treatment presupposes—(1) continuous open-air life in pure air, (2) maximum nutrition through a most abundant dietary, (3) rest—generally in bed, (4) a very restricted amount of exercise, (5) constant medical supervision, (6) hydrotherapy, (7) an environment free from excitement, worry or depression. (Practical Treatment, Musser & Kelly.)

It has been said there is no possible hope of a cure of tuberculosis by medicines, hydrotherapy, air, or food alone, and only by their combination in a hygienic and physiologic conception in the veriest detail is there any reasonable assurance of success.

Open air life must be insisted upon continuously, twenty-four hours of the day—with the maximum amount of sunshine. It has been shown over and over that patients accustom themselves to life in the open air in all climates, even when the thermometer registers extreme degrees below zero.

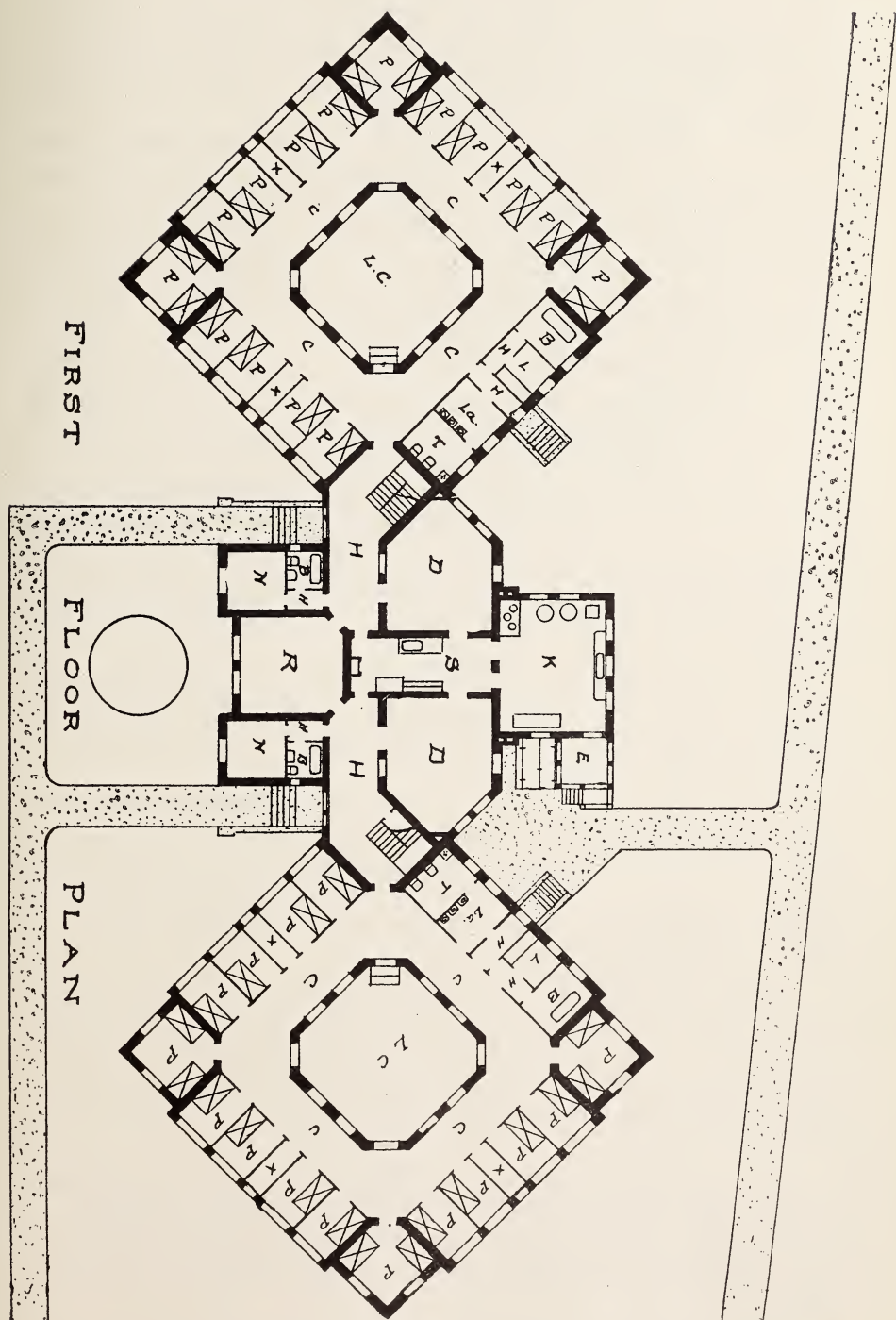
Their general condition is favorably impressed through their increased appetites and perfect sleep, for it is a well established fact fresh and freely circulating pure air is most conducive to sleep, provided the body heat is maintained at a comfortable point. This is a most important point. In the case of all patients and debilitated ones in particular especial attention must be given to the clothing and bedding needed for the out-of-door life.

The body must be clothed with warm woolen garments and the head and feet protected from cold.

The patient should undress and prepare for bed in a warm room and the bed should be comfortably warm when he reaches it. There should be, if possible light woolen blankets for covering in preference to heavy cotton comforters.

All fever cases and chronic cases should be kept constantly in bed or in semi-recumbent positions. At best exercise is limited. However, a judicious amount for non-fever patients is beneficial, as it tends to strengthen the body, add to the tranquility of the mind by creating a sense of self-reliance, and gives a bit of diversion.

The open cases of tuberculosis need constant supervision because of the danger of spreading infection through the expectoration. This is particularly true of insane patients who are prone to very untidy habits in this regard. To train a demented patient to use a sputum-cup is not the work of a day, or even of weeks. With many it is never accomplished.



It has been commented upon how well tubercular patients eat. This is more true of advanced cases than of early ones. It is not uncommon to find in early cases a greatly diminished appetite, indeed, a loathing for food. With life in the open air the appetite should improve, and in any case, the taking of a sufficient amount of a nutritious diet must be insisted upon.

Of the making of dietaries for the tuberculous patient there has been no end. However, forced feeding, or over feeding is not advisable except in rare cases. Occasionally in the case of the insane it becomes necessary to resort to forced feeding for a time.

Again quoting Musser and Kelly—"The consensus of opinion seems to be that from 3000 to 3500 calories per person per day is sufficient for the average consumptive in the proportion of: proteins, 500 to 700 calories; fats, 1300 to 1500 calories; carbo-hydrates 1200 to 1300 calories. Both the amount and the proportions must be varied, however, according to the individual conditions." Meat, milk, eggs, vegetables, cereals, bread and butter with simple but nutritious desserts and fruits, compose a very suitable dietary.

Where patients enjoy milk, from 1 1-2 pints to 2 pints per day are allowable, either alone or with raw eggs.

Hydrotherapy as a means of treatment remains to be considered. In selected cases much good may result from this method of treatment.

The most satisfactory results are obtained as in all methods of treatment in early cases, though some of the most enthusiastic advocates of hydrotherapy claim marked improvement by the treatment with even well-advanced cases.

Of late years no other one treatment of insanity has enjoyed such popularity as has the continuous warm bath; sprays, shower-baths, packs, spinal-douches, etc., are also used. In the case of the tubercular, they are essentially a hardening process accustoming the body to extremes of temperature, as well as assisting in elimination and stimulating metabolism.

If he is strong enough, the patient takes his own shower-bath each morning on arising, beginning with a temperature of 100° and reducing it 1° daily until 70° or lower is reached. This shower-bath lasts only about one minute, and is followed by a vigorous rub-down with coarse Turkish towels and if possible a short brisk walk in the open air.

If the patient is feeble the treatments are given by a trained attendant and consist at first of dry rubbings rapidly changing to the warm moist variety and are gradually reduced in temperature. They extend over only a few minutes and may be given to bed patients.

The spinal-douche and spray baths of varying degrees of temperature are also administered with marked benefit.

Hydrotherapy probably may be said to base its chief claims as

a rational method of treatment upon its aid to elimination of waste products, its assistance to metabolism, and its sedative effect through which it is possible for the patient to secure restful sleep.

A. Rose of New York, recommends the continuous warm bath for days and weeks at a time, and cites cases where marked improvement has been secured, even in well-advanced cases. He claims cases in which the sputum has cleared up, cough has been relieved and all the body functions have been benefited.

The administration of drugs to tuberculars has long been unsatisfactory; cod-liver oil, creosote, hypophosphites, tonics, arsenic and various other drugs may for a time appear to benefit the patient. Their value lies chiefly in increasing the appetite and in invigorating the body, giving the patient strength to help himself by exercise in the open-air and sunshine. Various symptoms must be treated as they arise.

It is because of the well-known benefits to be obtained by the treatment of tubercular insane patients by the hygienic dietetic open-air method that the State of Iowa has so wisely provided for a separate building, to be devoted exclusively to this purpose at each of its four State Hospitals for the Insane.

The first of these tubercular hospitals is approaching completion at the State Hospital at Cherokee. A study of the accompanying cuts will show that the style of architecture is not only unique but most scientific in that it provides for a maximum amount of sun-light and fresh air to each and every apartment.

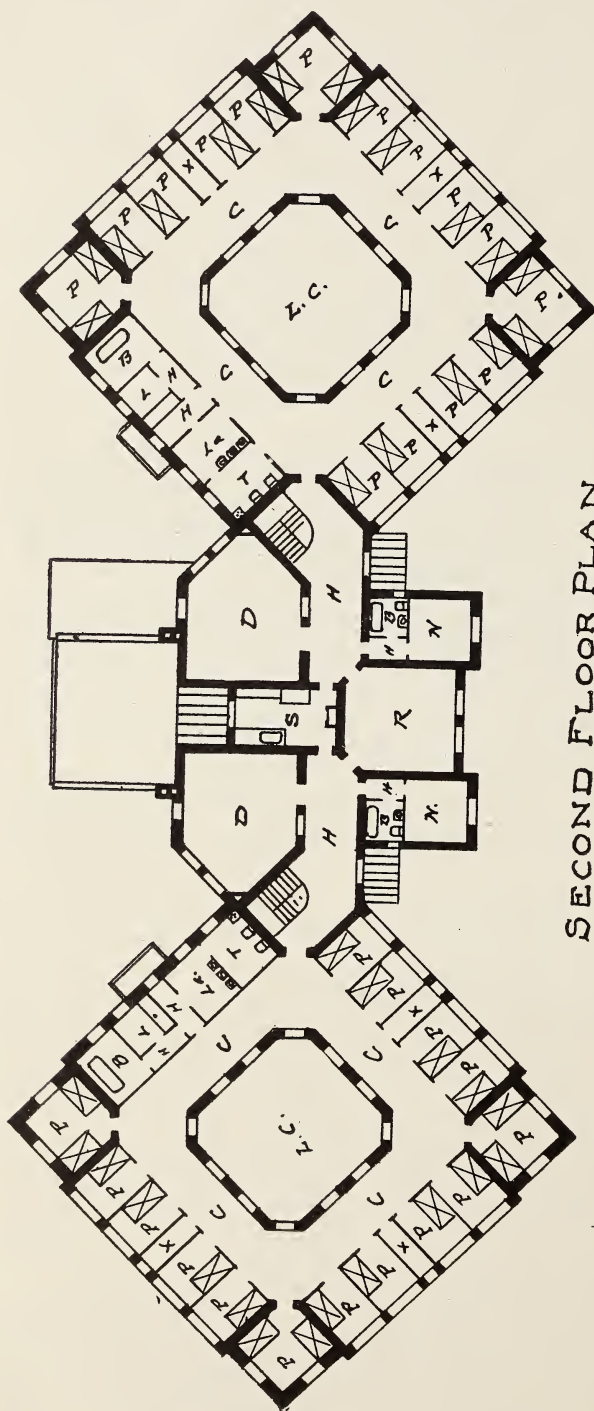
The following brief description of this building, by its designer, Mr. Henry F. Liebke, State Architect, will assist in understanding its construction:

"Figure 1 is the first floor plan of a building about 200 feet long from east to west by 80 feet wide north to south, calculated to accommodate 36 patients, besides nurses.

"The second floor is of identical form and arrangement and will accommodate 36 patients also, making a total of 72. It will be noted at a glance that its form and arrangement are indeed new and novel, and we confidently hope it will prove as practical as novel. The building is arranged for both sexes.

"It will be noted that the center section contains two entrance halls, in which the stairs are located, and from which access will be had to two nurses' rooms, a general reception room, two dining-rooms, a serving room and kitchen.

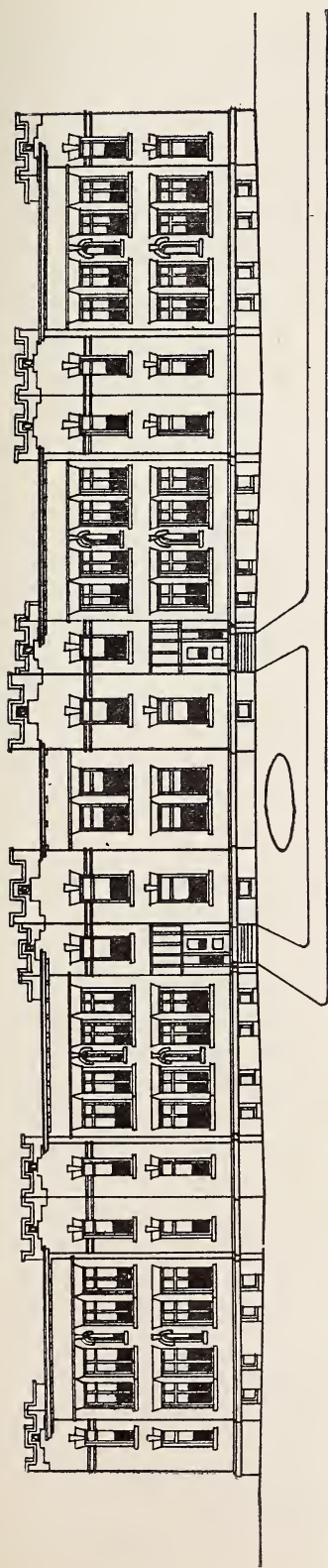
"The kitchen is only one story high but all other parts are exactly the same on the second floor as on the first. This central portion is of course quite formal, but the patients' wings are the point of interest. The wings are each 60 feet square, and are set with the diagonal axis extending north and south. At the center of each wing there is a large air court, 27 feet square on the diagonal, and 23 feet square in the minor direction. These courts con-



SECOND FLOOR PLAN INDEX TO PLAN.

- No. 1.—First Floor Plan.
 No. 2.—Second Floor Plan.
 No. 3.—Elevation.
 R.—Reception Rooms.
 N.—Nurses' Rooms.
 B.—Nurses' Toilets.
 H.—Entrance and Stair Halls.
 S.—Serving Room.
 D.—Dining-room.
 E.—Lattice Porch.
 L.—Light Courts.
 C.—Promenade Corridor.
 Ps.—Patients' Rooms and Alcoves.
 X.—Patients' Apparel Closets.
 H.-H.—Rear Halls.
 L.—Linen Rooms.
 B.—Patients' Bath Rooms.
 L.—Patients' Lavatories.
 T.—Patients' Stool Rooms.

The above apply both to first and second floors.



SOUTH ELEVATION

tain numerous windows all about and are mounted at the roof lines with plate glass skylights, each fitted with ventilators having openings about five feet square, which can be opened by a special hand gear from the ground floor and set open, much or little as may be desired.

"These inner courts will have all walls tinted light cream and the ground cultivated and equipped as a fern and palm garden with a spray fountain at center. These courts give a flood of light to the day corridor which surrounds them on all sides.

"On the three outward sides of these wings the patient's rooms and alcoves are arranged. The rooms at the corners are designed for two beds each while the four alcoves on each side are to hold a single bed each in order that these patients may be isolated. A thin partition separates each apartment from its fellow. On the corridor sides a large door having screen panels gives access to each, and the outer walls are as nearly all glass as the brick construction would admit.

"There will be a cellar beneath the kitchen, and the remainder of the basement will simply be an air chamber where all steam and hot water pipes are run, all in the open and fully accessible for inspection and cleaning. The basement will be lighted by numerous windows, which in the summer will stand open; floors fully cemented.

"To make sure that the air in the courts cannot become stagnant, galvanized iron air ducts are fixed under the floor in order that when the wind is from the east, south or west, the current will flow into the base of the courts and with their upper ventilators set open, a full air-flush will be secured. The court windows also, particularly in the summer, will all stand open and are sure to afford an upward draft, thus enhancing an inflow of outdoor air into and up through all rooms, which is one of the chief objects sought in its planning.

"As will be noticed from Figure 3, which is the south elevation, that the structure having so great a length and being but two stories high, necessarily looks low, but this feature also has its meritorious point, in that the direction of the air currents from whatever directions flowing, are not hindered or deflected in their course as they would be by a tall structure of such length.

"The whole arrangement and scheme is to catch all the air and all the sunlight possible from the south. If a building of this capacity were built on the usual plan, with a central building and long straight wings, it would stretch out to an enormous length of 300 feet, and its administration involve much more labor than that shown in our plans.

"As will readily be noticed, all who enter, do so near the nurses' open door and she has easy access to every patient and is at no time farther than 50 feet to the most distant patient from the entrance door to the ward. The numerous court windows enable her to see in all directions and to reach any bed by the fewest steps.

"The particular feature in the mind of our superintendent and myself has been to so arrange the patient's rooms that each would be flushed with direct sunlight at least once during each day, and this is admirably accomplished as the building, though unfinished as yet, amply demonstrates. The toilet sections also receive the early and late rays of the sun and an abundance of air at all times. The value of the actinic action of direct sun is desired in every room.

"The building is of fireproof construction; walls of brick; floors and ceiling of concrete; floors of cement and vitreous tile; inside finish, such as doors and casings, of wood, plain and all finished in the white. The building will be warmed by steam and ventilated by open transoms and windows at will. All windows and doors will be fitted with reinforced bronze screens in order to effectually keep out all insects. These will be left in all the year round.

"The kitchen will be properly equipped and through the serving rooms, supply the dining-rooms on both floors so that the patients need not use the stairs except for an outdoor walk. A lift at the end of lower serving room supplies the upper serving room. The sanitary equipment will all be of white enamel.

"The house will be lighted by electricity, and phone service

installed, as well as the most sanitary furniture, and I have no fear in stating that when all has been fully completed and equipped, Cherokee will possess a hospital planned and erected on lines not only unique but fully abreast of the times; one that will be visited by many who contemplate the erection of a similar structure, from afar and near.

“The total cost of building and equipment, cement walks, steam tunnel and landscaping, comes well without the limit of the appropriation, \$50,000.00.”

THE TRANSVERSE ABDOMINAL INCISION FOR PELVIC SURGERY IN THE FEMALE*

JOHN G. DAVIS, B. S., M. D., Des Moines.

In approaching the female pelvic organs for the purpose of surgical treatment the incision of choice should be one possessing many features of advantage alike to both patient and operator.

To overcome two great objections to the median line incision—shock and post operative hernia—the vaginal incision was devised and extensively practiced.

This incision, while greatly reducing the amount of shock and practically abolishing the post operative hernia has its limitations, which was soon evidenced.

In 1896 Küstner, at the second International Congress for Gynecology and Obstetrics, presented a method, then new to the profession of opening the abdomen in place of the median line incision.

This incision was made in the region of the suprapubic hair in a transverse direction through the skin and subcuticular tissue but the fascia as well as the peritoneum was divided vertically in the median line.

Küstner's idea was to get rid of the ugly median line scar so objectionable to many patients and recommended it for the more simple cases such as the separation of adhesions and ventral suspension.

Rapin shares credit with Küstner since he at the same Congress presented an incision identically the same in every respect.

Pfannenstiel in 1900, modified the above by incising the fascia also in a transverse direction separating it both above and below from the underlying muscles, by blunt dissection, and entering the abdomen through the linea alba and peritoneum.

This modification in addition to the cosmetic effect was of great importance, because it was devised to abolish post operative hernia.

By this transverse method of dividing the fascia, Pfannenstiel perfected one of the principal advantages to be derived by the pro-

*Read before the Polk County Medical Society.

cedure, because the fascia is now left completely intact over the vertical incision in the linea alba thereby getting rid of the unfavorable tension exerted by the transverse and oblique muscles of the abdomen on the fascial scar.

Pfannenstiel, as above stated, hoped by this method to eliminate that bugbear of all abdominal surgeons, post operative hernia and so far as any available reports are concerned his hopes have been fully realized.

Hartman, of Paris, and Stimson, of New York, had independently practiced the transverse fascial incision, but Pfannenstiel enjoyed the honor of being the first to plan execute, and publish the incision which now bears his name.

The Pfannenstiel incision having overcome many of the objections to both the vaginal and median line incisions it met with almost universal favor in the hands of those who gave it a thorough test.

The technic is as follows: the patient is placed in the Trendelenburg position and a transverse incision is made either in the transverse skin fold or at the edge of the superpubic hair just below it.

The length of the incision varies from three to six inches. The wound is now stretched with the fingers for enlargement, better exposure of the fascia, and the hemostatic effect it produces. Few vessels are divided giving rise to a minimum amount of hemorrhage and causing little interference with the subsequent nutrition of the flaps. Seldom is it necessary to ligate more than two or three vessels in the wound, and many times no ligation at all is necessary thereby, reducing the amount of foreign material introduced into the wound, which of course, has an important bearing on wound union.

The fascia is next divided in a transverse direction as far, if necessary as the outer borders of the recti muscles and often one or two inches nearer the pubes, because, as we all know, in pelvic surgery, an inch below is worth two below.

If necessary to extend the fascial incision, which very seldom is necessary, it should curve up to avoid injury to the external rings.

The length of the fascial opening depends upon the size of the vertical incision desired in the peritoneum.

Now we have the fibers of the skin and nerves as well as those of the fascia divided in their parallel direction and not cut across as is the case in the vertical incision.

The linea alba is now divided, which discloses the peritoneum. This is divided in a vertical direction. The lower portion is retracted preferably by a self retaining retractor. This being the only permanent retractor required. A small movable retractor is sufficient for the upper flap.

Childs of the New York Polyclinic has modified the above somewhat by separating the right pyramidalis from the rectus at its outer

edge to the linea alba and separating the rectus from the middle line using this as his avenue of entry.

The advantages to the patient are of extreme importance.

The upper flap covers the intestines and few if any laparotomy pads are necessary excepting in pus cases. Thus preventing one great cause of post operative adhesions.

The perfect exposure and easy access to the pelvic organs thus afforded, lessens greatly the amount of intradominal manipulations, and as a result a comparative freedom from shock and post operative complication, noticeable when employing this method after using the longitudinal one.

Advantages to the operator: the incision thus made is in close proximity to the pelvic organs allowing the operator to work to the greatest advantage since the opening centers the field of operation giving him free access in every direction and not compelling him as one well known operator has said, to work in the lower end of a rigid "V".

The muscles being free from their overlying fascia are easily drawn aside and can be kept out of the way with a minimum amount of force.

Since the long axis of the incision runs from the adnexia of one side across the fundus and to the adnexia of the other side, a maximum exposure is offered with a minimum lengthened incision.

In Childs' series of one hundred cases there were no acute dilatations of the stomach and not one of ilius, and he says, that abdominal distension was conspicuous by its absence.

To secure the strongest wound possible after operation the incision must be made in the strongest part of the abdominal wall by a method that will interfere as little as possible with the integrity of the fascia and muscles. We find that spontaneous hernia is seldom if ever found in the lower half of the distance from the umbilicus to the symphysis pubes since it is a region abundantly supplied with strong muscular tissue lying in close proximity and strengthened by the overlapping pyramidalis. The upper half of this distance is the weakest part of the abdominal wall, excepting the abdominal rings, because here the recti broadens, thin out and separate to pass the umbilicus.

Due to the simple separation of the recti and thinning of the fascia caused by pregnancy or large abdominal tumors, hernias are often seen here. It would seem then that this is one region to stay away from and not weaken further.

The bladder lies close to the peritoneal scar and as it fills pushes the intestines away, thereby preventing their adhering to the wound.

After a few months the cosmetic result is next to perfect since the line of scar tissue is scarcely preceptible and altogether so if made in the hair line.

"The Lord be with you," in a case of infection in a wound of this kind, is the common criticism among the skeptic, but it has been proven in the clinics of Wells, Tovey and Childs of the New York Polyclinic that these infected wounds clear up and heal fully as rapidly as the longitudinal ones, and with no post operative hernia, which is not always so with the longitudinal incisions.

Childs recorded one hundred cases in consecutive order to better set forth the possibilities of this incision, and among these, fourteen were septic at the time of operation, all of which healed by primary union.

Of the hundred cases, three failed to heal primarily, one instance due to an unabsorbed blood clot and two to an accumulation of serum. Not a death is recorded. There was one post operative complication due to a mild bronchopneumonia. The percentage of primary unions in this series was extremely high, being ninety-seven per cent.

I might add here in closing that for the past seven years Tovey and Wells of the New York Polyclinic, have had their patients out of bed on the second or third day after the operation and sent them home at the end of the seventh or eighth days

Discussion.

Lewis Schooler: The chairman could not have made a more unfortunate selection, I guess, than he has, to open the discussion on this paper. I have had very little experience with the operation known as the transverse incision in pelvic surgery, and what experience I have had has been good. I have had more experience with the transverse incision for appendicitis than I have for difficulties lower down in the pelvis. In the majority of cases of appendicitis I prefer a transverse incision rather than the ordinary longitudinal incision that is usually made in those cases.

I have been afraid of one thing in making an incision along the lower crease of the abdomen in obese persons, because there the skin appears to me to be thinner than on any other portion of the abdomen; and I have been afraid that if I got infection, on account of the perspiration and overlapping of the upper fold of the abdomen in those fat persons I would have a great deal of trouble in caring for them. I have had that experience in some operations on the chest—not a breast operation, but below the crease of the breast—where there is a slight infection, and it would take a long time to heal it up; and especially has this been true in hot weather. It is almost impossible to get absorbent material enough in contact with the wound or in the vicinity of it to absorb the moisture that is natural in hot weather, and especially in persons who are fat, because they apparently perspire more than lean persons, and do, as a matter of fact, except in rare instances. But it is possible that I may be mistaken in that view of the case. I have had no trouble with it in the few cases that I have used it, but I have been careful not to select that class of patients. It has no advantage where there is a considerable amount of work to be done in the abdomen, that I can discover. If there is a large tumor, or if there are numerous adhesions, or if the intestine or uterus is tied down, I see very little advantage in it over the longitudinal incision, because you have to get your hand into the pelvis and get behind those adhesions to break them up. You frequently haul out tumors that are interligamentary or otherwise, and I have never found any advantage or any better access by the transverse incision than I have in the longitudinal; and if I want to pass my hand up to examine the gall bladder or pylorus or the kidneys, I have found it a little more convenient to use the longitudinal incision, because it is easily extended up in those cases pretty well toward the umbilicus, and you have better access to the upper part of the abdomen. But for a small tumor or the ordinary pelvic work, I can see no advantages, so far as hernia is concerned, because you ought not to

have a hernia in anything like a clean case in either incision. In some cases you might imbricate a little better in tight abdomens by making the transverse incision than you could in the longitudinal incision, but those cases are few and far between; and I think a great deal of harm might result from the universal practice of the transverse incision. There are some cases in which we want to make our incision in the median line; there are others that we want to make it a little one side of the median line; and a good many surgeons in closing a wound of any kind like to have some muscles over the incision, pushing the muscle aside and bringing it back through the edge of the muscle. Some think it affords a great deal of strength to the fascia. It is of course a most important factor in an abdomen, but in gall-bladder operations and operations on the upper part of the abdomen I am satisfied that the muscle should be cut down upon boldly, and then the fibres separated; it is not necessary to cut through it. Again, there are a certain number of cases, perhaps seen more in the male than in the female, in which there is a deficiency of tissue in the vicinity of the abdominal rings, and in operating for hernia you sometimes have to practically make a tissue that has strength enough to prevent a return of the hernia, and these you are likely to weaken rather than strengthen by the transverse incision.

J. W. Cokenower: In my little experience in abdominal work I have never used the transverse incision, but I can't see any advantage it has over the longitudinal, except it might be where there was only a small opening to be made. But I certainly would not think of using it if I had to make a long incision to get away a large tumor, and my honest opinion is that it is more of a fad than a practical proposition. But you might come back at me and say that what people are not up on they are generally down on. However, I certainly would not, if I were doing abdominal work, use the transverse incision.

C. E. Ruth: It might be said to be incompetent for me to discuss this, because I have had absolutely no experience in the use of the transverse incision in these cases, and I will have to get a whole lot more light on it before I ever do use it. In the first place, the longitudinal incision enables one to do anything and everything that is possible in the transverse incision. It does not in any sense increase the danger of shock from the operation, if one uses the care that he should use to prevent exposure and consequent shock.

So far as the cosmetic feature is concerned, I would pass that by as not worthy of any consideration, because the deformity is so insignificant in a properly closed median incision.

The statement with reference to the vascularity of the parts in the transverse incision puts everything in favor of the vertical, where you cut absolutely no vessels except capillaries, while in the transverse incision you must cut some vessels and usually ligate some.

One of the principal objections to it, which has been brought out prominently by Montgomery, who probably has used it as much as any man in this country, is the tendency to hematoma and the accumulation of a serum and blood, as has been mentioned by the essayist, as the principal factors of interference with primary union. The result in the three cases in which the difficulty would indicate to my mind that had he used the vertical incision he would have had one hundred per cent of primary unions, because the transverse incision as compared to the vertical must double if not treble the amount of trauma.

So far as the danger of hernia is concerned, there is absolutely no danger from a median incision properly closed. So far as the danger of adhesions is concerned, there is absolutely no danger of adhesions from a vertical incision properly closed. I mean by that simply this: that if in closing the peritoneum the edges of the peritoneum are folded outward, so that smooth surfaces are brought together on the inner sides, there is no danger of adhesion to the median line in any case, unless the surgeon has traumatized the endothelial surface by dry gauze or friction so as to make it force nature to cause adhesion where none should exist. Then the enfolding of the apponurosis, or lapping, if you prefer, which can be done in all of the longitudinal incisions quite as well as the lateral, if the work be done cleanly, should give ninety-nine percent of primary unions. If one makes a slight error in his diagnosis and finds it wise to do more than he thought, the longitudinal incision makes it possible for him to do anything within the abdominal cavity by enlarging as the case may require.

R. A. Weston: I have seen the transverse incision done a great many

times. I will say that it has quite a number of advantages over the longitudinal incision in trans-peritoneal vesicle work, and I would think probably in some kinds of gynecological operations behind the uterus or in that locality it might have great advantage. I have seen many eastern men employ this incision with great benefit, especially for vesicular tumors, where the bladder was to be attacked on the posterior surface near the ureter. This does give greater exposure than any longitudinal incision can, especially where the bladder must be filled partially with fluid.

Dr. Davis in conclusion: As I expected quite a discussion has been aroused and many criticisms advanced which is bound to be the case among surgeons, who have not thoroughly tested the method.

Post-operative strength of the abdominal wall and room at the time of the operation is exactly the idea in making the transverse incision, and I certainly do not agree with Dr. Ruth's criticism in regard to the room.

The cosmetic effect has been stamped in the discussion as of no importance, but I wish to further emphasize the fact that it is important, because no patient cares to go through life with a great scar a half-inch to one inch in width, if it is possible not to have a scar at all. This probably makes a great deal more difference to the patient than to the doctor in some instances.

I have seen many a longitudinal incision which has gradually separated till at the end of a year's time, the scar was from a half to one inch in width. Exactly the opposite results are obtained from the Pfannenstiel method, and at the end of six months, no scar, or at least nothing but a white line, is visible.

Ventral hernias are bound to occur occasionally through these old scars, and especially in the hands of those not quite so experienced in abdominal surgery as Drs. Ruth and Schooler, therefore, why not employ a method which we know, judging from all past statistics, such a result can not possible occur in.

THE NEWER TREATMENT OF FRACTURES*

WM. W. BOWEN, M. D., Ft. Dodge.

The treatment of fractures is one of the oldest subjects known to the medical world. Ever since there has been men there have been fractures and of necessity they have called for treatment, and the treatment of the fractures by the ancients was far from unskillful. In fact the treatment of fractures in the time of Hippocrates was just about as skillful and scientific as the treatment up to very recent times, it was much better then than during the middle ages.

The early physician did both surgery and internal medicine, but after a number of centuries the two became divorced one from another so that the educated physician administered medicine and in a crude way made a diagnosis, but the practice of surgery in any line was far beneath his dignity. Then there arose a class of men called bone setters, these were more or less associated with the barbers, and in later centuries came to be called the barber surgeon, but in some of the countries in Europe the bone setters continued to occupy a place up to the last half century. These bone setters had no knowledge of medicine, they were not allowed to prescribe anything, but were allowed to adjust fractured bones, and some of them acquired a very excellent skill in this line of surgery, and a few of the barber surgeons attained wonderful pre-eminence.

After the study of anatomy became very common and people

*Read before the Austin Flint-Cedar Valley Medical Society.

were allowed to dissect, the knowledge thus attained was applied at once to the treatment of fractures and the principles of treatment then evolved seemed quite satisfactory, as a rule, and were considered by some to be well nigh perfect. Fractures were treated by these well taught principles and generally very satisfactory results were obtained, even though there was a certain number of cases of shortening and now and again a case of non-union or other complications.

Few of us had any conception of the importance of the discovery of the x-ray when we first heard it talked about twenty years ago. None of us here present at that time had seen an x-ray picture, but there has been nothing within the last five hundred years that has so profoundly affected the treatment of fractures as the discovery of the x-ray and the perfection of the x-ray machine. Now practically every person that has a fracture must have it x-rayed and if it is not in perfect apposition there is something doing to the doctor who set it. Formally rather imperfect appositions united in more or less faulty position but in almost all of them the functional results were good and the patient was satisfied, also in a large majority there was little or no deformity of the limb, but now conditions are different. A man gets a fracture and has it treated with just as much or more skill as the old doctor gave him, he has just as good functional results as were had formally, but he has an x-ray picture made which discloses that the apposition is not perfect, the next tendency for him is to sue the doctor and he shows this x-ray picture to the jury and no matter what the functional results are, no matter what the visible symmetry of the limb is, he merely has to complain that he has pain here or there and stick that x-ray picture before a jury and they give him a verdict.

Twenty years ago a malpractice suit was one of the rarest things in medical practice, they were so rare that no doctor had any fear of them and when they were brought very few doctors had verdicts against them, but now the case is quite different.

During the past three years the State Medical Society in its Medical Defense Department handled at least ninety malpractice suits and probably there were as many more suits brought in the State with which the State Medical Society had nothing to do, and this says nothing of the hundreds of cases wherein threats have been made and wherein the doctors having given their time and better skill than the older doctors gave and have been deprived of their fees because of threatened malpractice suits. There are few doctors who have the hardihood to sue a man to collect a bill where he knows the man is liable to hold him up to the community as an ignorant impostor by way of a malpractice counter claim, and more malpractice suits are brought because of fractures than any other subject, therefore this is the liveliest subject that I know to occupy your attention.

The results of the x-ray as a means of bringing malpractice suits against the doctor is a secondary affect, the first and legitimate use of the x-ray is to show us where heretofore we were making errors and to direct us how to rectify those errors, and it is the most useful adjunct that has been given us in the treatment of fractures. Now we can adjust a fracture and prove to ourselves and to the patient that the fracture is in perfect apposition, and if it is not in perfect apposition, we can place it so. The use of the x-ray is compelling us to be much more careful in our treatment of fractures than we were before because we know that practically every man is going to have a picture of it and that if our treatment has not been absolutely perfect we are going to hear from him. The ease with which we can check ourselves up with the x-ray has undoubtedly made us more careful in the treatment of fractures and has set all surgeons to thinking as to how better results may be obtained in a great many of our fractures. No matter how they are treated we are going to have some bad results, there will be a certain number of cases of non-union, and a certain number of cases of shortening and other cases of more or less deformity in spite of any treatment we can give to them at this time and we must keep in mind that every one of these bad results is a living menace to us.

We had begun to think that many of these problems have been solved for us when Lane showed us so forcefully the use of the Lane's plates and the rapidity with which their use was brought into the profession was startling, but the main object of this paper today is to give you a word of warning in regard to the use of the Lane's plates. Somewhat over a year ago a committee was appointed by the British Medical Society to investigate the modern treatment of fractures, naturally a great deal of attention was given to Lane's work. Now Lane is a wonderful operator and a wonderful man, and they found that Lane's results had been simply superb. They could find no man who had removed a single one of Lane's plates which Lane himself had applied, but when they came to investigate the work of other men scattered about the whole of the British Islands, the results were so absolutely bad that it was deemed unsafe to the profession to make the report public, therefore a modified report was made which was published in the British Medical Journal.

I am of the conviction that if a committee were appointed in this country to investigate the subject they would find fully as bad results here. Why is this? It is because the proper technic of applying bone plates is one of the most difficult things in surgery, and there is not one surgeon in five hundred who is competent to apply Lane's plates properly and with safety to his patients. The idea that it is a simple operation, that any ordinary surgeon can do it properly, and that it can be done in the home of the patient, and

with the assistance that is ordinarily to be had under such conditions is all wrong, it must be done properly by a surgeon with much more than usual skill, he must have with him a skillful corps of nurses, and assistants and he must have the proper instruments at hand, and it must be done in an aseptic operating room and not in the home of the patient. I would say that these remarks apply to the wiring of bones, and to the use of nails and ivory pegs, etc., just as well as to the use of Lane's plates.

Lane is too enthusiastic over the use of his plates in advising that simple fractures should be made compound and plates applied, this is rarely the case and the use of the plates should be restricted to those cases in which it is impossible by other means to hold the bones in opposition. It is a bad sequence to compound a simple fracture and apply a plate and then get a non-union, or an infection requiring the amputation of the limb, or the death of the patient, and yet these results are rather common in the use of plates.

You may conclude that this is rather a gloomy view to take of the Lane plates. The Lane plates have a very important field of usefulness, and, when applied properly and under the very best surroundings are very commendable appliances to use, in fact the very best that can be had, but their indiscriminate use is to be highly condemned.

During the past five years Dr. Evans and I have treated one hundred and fifty-two patients for fractures. Some of these patients had two or more fractures but are counted as one. On looking over the record I find the fractures are distributed as follows:

Fractures of the arm and forearm, forty-eight. Of these the elbow was fractured nine times, one of which was compound. Fractures of the forearm occurred thirteen times, the fractures of the humerus twice, and Colles' fracture occurred twenty-six times. The lower extremity was fractured fifty-five times, of which the shaft of the femur was fractured eight times and the hip and the leg either a tibia or fibula or both thirty times. To this must be added twelve compound fractures. The clavicle was fractured nine times, the hip five times, the lower jaw three times. The other fractures were of every variety.

The fractures of the forearm have nearly always been in children, and there is not a single Colles' fracture in a child. From this it appears that in an adult an injury which produces a Colles' will produce in children a fracture higher up in the forearm, and they are nearly always green-stick fractures.

Our fractures of the elbow have occurred nearly always in children. These fractures have been treated with the use of the x-ray where ever it is practicable. The fractures of the elbow have about fifty per cent of them been very good results and fifty per cent have more or less lessening of motion.

Fractures of the forearm have been satisfactory in every case.

Of the twenty-six Colles' fractures, two have been very bad results. The x-ray was used in their treatment. One of them was reset three times and the x-ray showed each opposition to be good, but after a week or more the reduction would be displaced and the final result was bad. The other bad result had the arm set twice and the x-ray showed this to be in good condition, but nevertheless both of them were bad results. There never was any pain with this last fracture.

We found when we began using the x-ray in Colles' fractures that in about a week it was necessary to readjust about fifty per cent of the fractures. It is supposed ordinarily that the Colles' fracture has little or no tendency to displacement, but this has not been our experience in about half of the cases. Of the thirteen compound fractures all were of the leg except one, and that was of the elbow and the final result of this one was good. Two died within a few days of the injury; the death was not the result of the fracture but of other injuries. Of the fractures of the limb, eight were fractures of the femur and thirty were below the knee. Of these ten were Potts' fractures, eight of the tibia alone three of the fibula alone and nine of both fibula and tibia.

From these fractures it would be seen that Colles' fractures are more than twice as frequent as any other fracture.

Now I wish to say something about the various types of fractures. Compound fractures are justly considered the most dangerous fractures to deal with and require the greatest skill in management. The tendency in compound fractures is to do too much and after our study and experience with these fractures we do as little as possible. The first thing to do is to cleanse the skin about the wound and if the bone is still protruding from the wound to cleanse that very thoroughly before it is returned inside the skin. Antiseptics in these cases do more harm than good. It is best simply to clean out the foreign matter with forceps, sterile gauze, etc., enlarging the wound if necessary to do this thoroughly and wash them out with sterile water or saline solution. The use of strong antiseptics cannot be condemned too highly for instance painting them or mopping them out with carbolic acid followed by alcohol as was so common a few years ago, or irrigating them with strong solutions of bichloride or chemical antiseptics. For a while we painted or poured into the wounds pure tincture of iodine and now have practically abandoned it. It is our opinion now that the only antiseptic that is advisable in compound fractures is peroxide and that is used not for its antiseptic properties so much as for the fact that it separates foreign matter from tissues so that it can be more readily removed. Even peroxide has a slight destructive action on the delicate exposed cells, but it is so nearly like water that its action is probably less than any of the other antiseptics mentioned and it is the best cleaning agent of them all. It is im-

possible to sterilize an open wound, and the best we can do is to injure the normal cells as little as possible. Wiring, plating or fastening compound fractures by any mechanical means whereby a foreign body is left in the wound is to be condemned. Very few of the cases will do well if a foreign body is introduced into the wound and in all cases eventually the foreign body will have to be removed, and usually when the foreign body is removed its presence has destroyed bony or soft tissues to such an extent that more or less of these tissues must be removed also.

It is best simply to place the injured member, which is usually a lower limb, in as nearly as possible the proper apposition and hold it there by some retentive apparatus like a fracture box or bags of sand that fit the limb very closely so as not to interfere with the circulation at all. Sometimes extensions can be applied, but often this can not be done. It is not safe to place these injuries in plaster paris without the plaster is cut the full length of the cast. After the first dressing, the wound should be dressed frequently enough to keep it clean, and after suppuration has ceased (and suppuration usually occurs) the proper attention should be given to the placing of the limb in the proper position if it could not be so placed before.

It is now time, I think, for Lane's plates or wire or nails or whatever retentive means seems advisable, but they should be omitted until all suppuration has ceased.

A simple fracture of the hip is one of the most serious things we have to contend with. For an intracapsular fracture we find and recommend the Maxwell-Ruth method of treatment to be the best adapted to meet these conditions.

Fractures of the elbow (and by that I mean any fracture in the region of the elbow that involves the joint regardless of what bone is fractured, is next to the hip fractures the most serious problem that we have to meet.) I am frank to admit that we have not been able to work it out to our own satisfaction. Some of these fractures are very hard to reduce and much harder to retain in reduction. They are hard to fasten by any mechanical means known to the science of surgery. Attempts to plate or wire them is most likely to end in failure, especially in children the bone is so soft near the joint that it will not hold screws, and a wire is liable to cut in through the soft cancellous tissue, and it is my belief now that that almost all of these fractures had best be treated by the old fashioned methods using the x-ray to assure us that we have good opposition, and even the x-ray pictures in these fractures is not an easy problem, a side to side view is very easy to get but a picture from before back is very difficult because the fractures are usually put up in flexion, which makes it harder to get the rays through the joint. I am not proud of our record of fractures in the elbow, about fifty per cent have very good results. Then a considerable proportion have lessened motion or more or less deformity. One thing about

it is encouraging, is that even in some of the cases in which deformity is very great will still have perfect freedom of motion.

Now how is the ordinary practitioner to get around these difficulties?

1. No matter how simple the fracture seems to be you should call a colleague in consultation and the patient must be anesthetized in every case so that the most careful examination can be made, and you should see to it that this colleague does something more than administer the anesthetic, that he must confirm your diagnosis and treatment. The man who attempts to adjust a Colles' fracture or any other simple fracture alone and without the use of an anesthetic deserves a malpractice suit, and is very liable to get it.

2. After the patient is able to be about or can in any way be gotten to an x-ray machine the fracture should be x-rayed and your work be thus checked up. Take a fracture of the hip for instance, this is very difficult to do, but if you are able to do this, you should use every other means available to you, you should by all means not omit the anesthetic and you should have more than one competent doctor in consultation and probably several times during the treatment of the fracture.

3. You should thoroughly explain the conditions to the patient and the patient's friends and give a prognosis to them that is bad enough, you will always be forgiven, if you make a very bad prognosis and the result is good, but you will never be forgiven if the prognosis is good and the result is bad.

PHYSICAL DEFECTS OF THE MENTALLY DEFICIENT*

F. P. LIERLE, M. D., Marshalltown.

With the wider knowledge and deeper understanding of these later years has come a sharper sense of responsibility to the medical profession. Its capable practitioners are not less devoted to the individual patient but they have added to this a new sense of responsibility to the community and the race in general.

Of all the great and valuable discoveries in the profession and practice of medicine which have arrived in blessing and protection to human life within the past three decades, none is so great and prolific of future benefits to the race as the discovery by the profession and its membership of a public conscience within themselves.

This awakening is not confined to the medical profession alone. In a dim way the public itself is rousing to its responsibilities and its possibilities, realizing that there are civic responsibilities beyond street paving and fire protection and that it is as much a part of public duty to maintain public health as it is to maintain public

*Read before the Iowa State Medical Society, 1913.

highways, to prevent pauperism as much as to relieve poverty: that the neglected child or deficient child is as fully an object for assistance and guardianship and development as the gray hairs of old age of charity.

And this is not only the stirring of public conscience but of public common sense: it is a sense of efficiency as well as of sentiment, self protection as well as charity.

It is for those in authority and placed in positions of opportunity over organized effort, to decrease crime and pauperism and to develop capacity, thrift and higher conditions generally among those under their charge to heed well the new call of a public awakened conscience. It is their opportunity as it is their duty, to realize that to relieve the child of an obstacle to success and usefulness, which unrelieved would be insurmountable is of greater service than the maintenance of populated prisons and almshouses.

Especially in state institutions should the new opportunities afforded of recent scientific attainment and the results of minor surgery on the future of children be heeded and their advantage seized. Public schools are careless. State institutions should never be careless. Their's is a mighty opportunity of leadership and they should not neglect it.

No student of an industrial school or for that matter of any school, should suffer under a removable obstacle, physical or mental to success which may be removed or ameliorated by proper treatment, whether it be educational, medicinal or surgical.

I fully realize that new ideas and thoughts along scientific lines; departures from the well beaten paths of older ideas are not to be looked upon as technical, unscientific and impracticable in their application. Time and study and the development of professional and public sentiment brings out the facts or errors of these new theories.

To my mind it is neither unscientific nor impracticable to fully consider the psychology of the growing child and the influences affecting its normal mental development.

I have been prompted in writing this paper through my connection with Iowa Industrial School for Boys at Eldora, as oculist and aurist.

During my examinations of these boys and the almost universal presence of some physical defect, the question arose in my mind, how much if any, influence these conditions had in the production of the so-called mentally deficient, truants and incorrigible boys. It will be a year at least before our statistical information covering this question will be available as proof in support of my position, that physical defects are a considerable factors in the etiology of these conditions.

We have just recently at that institution established a system of examination and removal of physical defects together with sta-

tistical reports, covering their future physical, mental and moral development, that we hope to give out to you later. It must therefore follow, that at this time this paper must be, to a great extent theoretical.

In the school of ancient Greece six hundred years before Christ it was taught that a sound mind must have a sound body; and the training of the body went hand in hand with the training of the mind.

Modern inspection of the public schools. Through the investigations of Allport, Wright, Cornell and others have established beyond doubt the great importance of giving attention to the removal of physical defects.

Any practitioner of experience in private, hospital or institutional work recognizes the vast improvement derived physically and mentally in the proper care and treatment of these cases. The following question: What if any effect, have you noticed in the mentally deficient or incorrigible children of the presence of error of refraction, adenoids and enlarged or diseased tonsils and obstructed breathing? was addressed to thirty-five well known industrial schools throughout the United States. Of this number twelve were interested and doing some work along this line, while twenty-three were not interested or at least admitted they had done nothing.

Superintendent Lawson of the Lansing, Mich., Industrial School says, "We find a great number of boys who are far sighted which I think is apt to prevail with boys who run away from school".

Dr. E. E. Gardner, Superintendent of the Soskanosset School for Boys at Howard, R. I., writes. "We have no authoritative data on the questions asked. Our experience with this branch of work has been very satisfactory. We employ a visiting ophthalmologist and find his services to be absolutely indispensable. We have operated for adenoids, enlarged tonsils, and corrected, seemingly, obstructed breathing from these cases with great and satisfactory results. In fact we have found many cases in boys who were sent to us as habitual truants wherein we believe that defective eyesight was the principal cause of their delinquency in this respect."

Mrs. Mary Johnson, Superintendent of the State Industrial Home for Girls, Adrian, Mich., writes, "We have no statistics on the subject of influence of errors of refraction, adenoids, and enlarged tonsils or obstructed breathing on the mentally deficient child. However, these causes, as far as we have observed oftentimes increase the irritability, but apparently have no effect on the incorrigibility. The presence of adenoids are one of the causes of stupidity."

H. W. Charles, Superintendent of the Industrial School for Boys at Topeka, Kans. writes "I am glad to see the subject receiving the attention of your school."

Dr. F. L. Wright of the State Agricultural and Industrial School at Industry, N. Y., writes, "I am convinced from personal observation covering an experience of three years at this institution, whose average attendance is 740 boys from 10 to 16, that the removal of adenoids and tonsils, especially the former, the correction of nasal defects, and the bringing back to as nearly normal as possible the diseased condition of the naso-pharynx, has an influence for the better, I am sorry that we have no definite data on these points, but commencing recently we are examining the boys on their departure, as well as on entrance to this school, and hope within the next few months to collect some valuable statistics to prove more definitely this theory."

Dr. Samuel D. Risley, Philadelphia, writes, "I am convinced by a very considerable experience in the matter of the very great importance of attending to these defects, not only the case of feeble-minded children but in all school children".

Dr. W. F. Penn, Superintendent of the Pennsylvania Training School, writes, "Errors of refraction should not have any particular effect on the causing of incorrigibility, and only as it effects the boy's ability to study, would it effect his actions or habits. We have had operations performed on a great many boys and girls suffering from adenoids and obstructed breathing. After an operation of this character we have noted great improvement in mental activity, a clearer reasoning faculty, and an improvement in personal appearance".

Mr. Charles Dunn, Superintendent of the State School for Boys South Portland, Maine, writes, "While we have no statistics to show the actual results of these minor operations, it is obvious that their beneficial effects on our boys warrant a continuation of the policy".

Dr. G. C. Savage, Nashville, Tenn. writes, "I have seen children who were backward in school, spring forward almost at a single bound, after having errors of refraction and muscle errors corrected, also after operations for removal of adenoids and tonsils."

Dr. Frank G. Brunner of Chicago, writes, "Dr. Kenne of the Health Department of the Minneapolis, Minn., Public School is just now carrying on an extended investigation along these lines, and I have data myself on about three thousand boys who have been in our Parental School covering these and other matters, physical and mental, that I am working over into form for monographic printing."

The child who is unable to keep up with the ordinary school work under ordinary conditions may be termed mentally deficient. Mental deficientes are classified by Cornell as dull, borderland and feeble-minded. Dull children are those who fail to do ordinary school work satisfactorily, but improve under special care and attention. Borderland cases are those in whom their deficiency is so apparent and pronounced that doubt exists as to whether they

should be classified as backward or feeble minded. They have peculiar traits, lack of emotional control and coördination. Feeble minded children are those with incurable mental defects either congenital in origin or resultant from infantile or adolescent disease or injury permanently affecting the mind.

In this paper I do not wish to take into account the treatment or discussion of this latter form of mental deficiencies; but to present the dull and borderland cases in whom I am certain great and permanent benefits can be derived by proper mental, physical and moral care. The general causes of mental deficiencies of this class of children are to my mind: first, environment; second, physical defects; third, heredity.

In the actual diseased, mental deficient or feeble minded, heredity undoubtedly plays the most important part with environment and physical defects following it closely. In this class of cases we have inheritors of syphilis, alcoholism, tuberculosis and general enfeebled physical and mental conditions, transmitted directly to the offspring producing enfeebled mental and physical conditions.

In the dull and borderland children we find inherited neurotic tendencies interfering with emotional control and coördination. It is this class of cases the presence of physical defects furnishes an additional handicap to the already monstrous burden he is compelled to carry.

In the mentally deficient, incorrigible and so called truants we find children who to the ordinary observer appear to be normal. In most respects they may be so; but on close investigation there will be found usually a lack of ability for close concentrated application. A history of sudden emotional outburst, of a criminal or milder character inexplicable by the offender. In other words he is unable to explain why or for what reason the act was committed. He cannot explain, he does not know. A lack of emotional control, especially in the borderland cases is often illustrated by sudden fits of anger without cause or by acts performed without the display of thought or reason and without excuse.

We are all acquainted with the habitual headaches, migraine, sensations of fatigue, general and local exhaustion, resulting from eye strain and the reflex irritations due to this cause. Chorea, epilepsy or epileptiform convulsive seizures, various stigmata of hysteria, we now know are in many instances due to ciliary or accommodative strain.

Necessarily these children thus affected possess unstable nervous conditions, lack of power to concentrate, as well as lack of desire or will to accomplish is present.

Children with adenoids are notoriously dull and stupid and are generally recognized in school work as of a lower mental efficiency than normal children.

Obstructed breathing has its mentally injurious effect by pro-

ducing a generally lowered physical condition through improper oxygenation and poor breathing.

Diseased tonsils likewise produce deleterious effects through their notorious capacity for infection and the resultant weakening of the system and lowered resistance.

During the period of adolescence and the presence of these physical defects the child passes through various physical and mental changes. In other words the child is growing. His muscles, bones, hair, nervous system, brain all are gradually developing into maturity. The development of his mind or mental condition is absolutely dependent upon a healthy, gradual physical development. Any serious interference with this, Nature's plan of development must necessarily invade that most delicate and most sensitive mechanism of the human body—the central nervous system.

These boys and girls must have the power to control their emotional and coördination movement. This can be brought about only through proper physical, mental and moral training. This training can be best afforded in the removal of such physical defects that in any way retard or divert such a development.

Statistical information gathered from investigation and study among the poor of the great cities shows a large percentage of dull or mentally deficient children, poorly nourished, poor physical development, and the presence in eighty per cent of these cases of various physical defects certainly is self indicative of the proper course to pursue. I very firmly believe that if the proper attention was given to the medical inspection of the public schools the population in our industrial schools would be materially decreased.

These boys at the Eldora Industrial School are not criminals or outcasts, not lost children. Some of them are deficient in many ways. None of them are immoral. I have small patience with the man who believes that a child can be immoral. Children may be unmoral. Untrained persons, without guide except instinct and diverted emotions are unmoral in or out of reformatories. These boys are in that school, partly by heredity, partly by environment, some by reason of eradicable physical effects, greatly by lack of training, largely by reason of a mistaken public idea, but mainly because they have not had the advantages of the domestic animal of Iowa. They haven't been bred carefully and fed at stated intervals on a balanced ration and been kept from straying out of harm's way. In that school are the potentialities of high citizenship. Charity, science, kindness and common sense can not fail to convert these children into useful men and women.

The development of the race has its corner stone in training. The tree which produces the delicious apple of southern Iowa was once a sour crab-tree. The violin was a tom-tom, the majestic liner a floating log or a dug out. The giant sequoia a twig. Untrammelled growth does not mean development. Burbank and a prune seed

may create a new fruit, with God's help, but it needs all three; the power that gives life, the life that grows and the higher sense that directs growth. We have given great sums and spent the lives of scientists seeking to develop fruits and grains and domestic animals. We have a department of agriculture. But we are still careless of humanity. It seeds where it may in any soil, grows as it can and bears such product as its environment and opportunity permits. The American hog is known and honored all over the earth. We guard him with serums manufactured at state expense. He deserves it. And the human animal in Iowa has or should have at least equal rights and equal attention paid him. All in all the latter animal is the one in the last analysis who raises the mortgage.

THE ELECTRICAL TREATMENT OF FEMALE PELVIC DISEASES*

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The subject which I have chosen for my remarks this afternoon is somewhat broad in its scope. I shall not attempt to give you any diagnoses whatever, but will try to give you something that may be interesting to a part of you and decidedly uninteresting to others for the reason that I find among the members of the medical profession quite a variety of opinions regarding the use of electricity in troubles of which I am going to speak. I realize too that what I shall have to say to-day may bring down upon my head severe criticisms, but if I may be the means of provoking some discussion along these mooted lines of treatment, it may be the means of adding something new to my knowledge as well as that of yours. I recognize the fact that many of the medical profession would place a large question mark after the word "electricity," especially when applied to the treatment of female pelvic troubles. But, seeing is believing, and feeling cannot help but add one more proof to that of seeing, and when you can have the testimony of the patient so far as sensation and feelings go, and that of any other third person interested in the matter so far as sight or seeing goes, you certainly cannot have anything but positive proof as to what electricity does and can do in female pelvic troubles.

In a paper I read at the Austin Flint-Cedar Valley Medical Association meeting some time ago, I tried to give you some tangible explanation of electricity, stating to you that galvanism, or that the galvanic current, is the principle current upon which you will most depend in the treatment of these cases, and also gave you some idea as to how it did its work, but permit me to again refer for just a moment to a few of the things that I said at that time in order that you may again thoroughly understand what is to be accomplished

*Read before the Austin Flint-Cedar Valley Medical Society.

and how it may be accomplished by the use of electricity. Galvanism is the principal form of electricity depended on in the treatment of these cases. The faradic current is of course used quite extensively, but it is simply secondary to the galvanic. I told you in my former paper that there is just as much difference between the action of the two poles, positive and negative, of galvanic electricity as there is between the action of an acid and an alkali, that the one contracts and hardens tissue, lessens discharges and stops pain, while the other one dilates and softens tissue, increases discharge and is quite liable to increase the pain. Now starting with these two premises, it will not require a very profound thinker to understand and put into use this form of electricity. Instantly there flashes through your mind various conditions of pelvic troubles peculiar to the female where galvanism would be positively indicated and which pole is positively indicated. Knowing this now, and it is a fact that you can very easily demonstrate at any time, does it not stand to reason that if electricity is of the nature that I say it is—does it not stand to reason that you may look for certain results upon the use of certain forms and varieties of electrical current?

Supposing you had a patient present herself to you in your office and her complaint should be something like this. Backache, more or less tenderness or soreness low down over the abdomen, a bearing down or a dragging sensation after being on the feet any length of time, a fullness over the pelvis. It may be that she will tell you that menstruation is as often as every two or three weeks; possibly she may say she has not menstruated for one, two or possibly three months, but, however, there occurs during each menstrual period a sensation or feeling as though she were going to be sick but still she is not. Now in your own mind you have fully decided before an examination is asked for or even consented to, what this patient's trouble is. You may be wrong in your already snap diagnosis, but it is highly probable that your diagnosis will prove to be correct and after a few further preliminary questions and an examination, you find that all of her symptoms and many more too really should be present because of the conditions that you find here presenting themselves. She is having more or less of a leucorrhoeal discharge, some tenderness and soreness upon sitting down or riding, backache, at times extremely severe; many times, if these cases are of long enough standing, stomach troubles, headaches—occipital and vortex, the eye may be involved in the trouble, but on the whole you can only get a history which shows a completely undone and played out woman. Local examination reveals a cervix possibly with slight laceration and granulations present, position low down in the pelvis, more or less tenderness is felt in the tubal regions, some infiltration shows itself by the boggy or tealboard feel which you find in the lateral regions. There may be a lateral displacement, adhesions may be found with any of the displacements that may be present, and on

the whole a condition is found existing that completely puts your patient out of business. Now I am not going to diagnose this case for you. You all know what you will find in conditions of this kind and especially so if the patient proves to be a married woman with children and gives a history of miscarriages. I doubt not but many of you with the history of a case as I have given it and especially so after the patient has stated to you, "Doctor, I have doctored with all the physicians I know of, and so far, none of them have ever given me any relief. I get better for a time especially when I am taking the medicine and when taking the treatments, but in a very short time I am just as bad as ever, and I have about given up trying to do anything more." With a history of this kind from the patient, the most of you would say that a surgical operation is the only thing that will give her any relief. Her displacement with adhesions, her irregular menstruation with granulations, the excessive menstrual flow, or a condition almost equal to amenorrhea, would be a combination of symptoms where many of you, I doubt not, would advise positively an operation as the only means of relief. Now, as I said in my introductory remarks to this paper, I expect to draw down on my head to-day severe criticisms, but criticisms or no criticisms, I am going to give you what I believe to be actual facts, not a mere theory, but facts in my own experience, proof of which I am able to furnish almost any day.

It has been my misfortune several times in my life to have cases just as the one described come to me for examination and diagnosis after having had the experience with many other physicians and having been told that an operation was the only thing that would do any good. I say it has been my experience to have these cases come to me for council and diagnosis, and many times I have seen them improve so much that by their own testimony unsolicited and unasked they could not help convincing any one of you that life had ceased to be a burden and that its comforts and pleasures were once more enjoyed and that a full restoration to health had been the outcome of their treatments. Do not think for a moment that such a case as I have just described or even one whose symptoms are still more complex and varied than this one, is a subject for operation or that even an operation must be thought of in many of these cases, until all means have been exhausted and the case has proved untractable to this greatest of all remedies—**electricity**. Stop to think for a moment of the results or effects of the application of this remedy. Hardening of tissue, softening of tissue, contraction, dilatation, checking of discharge, producing discharges, relieving pain, causing pain. See what a variety of therapeutic means of doing business in this most complex of remedies you have at your command. There is nothing in the line of internal medication, or topical medication that can equal it. It is not all a mental effect that is produced, it is not a simple play upon the imagination. When en-

larged conditions can be made to grow smaller, when atrophied and small conditions can be made to grow larger, when abnormal functions can be made to become normal, when tender and sore regions can be made insensible and normal to the touch by a remedy so simple, so easy of application and yet so tangible as that of electricity, let me urge upon you not to discredit it, not to push it aside with a curl of the lip, but use it intelligently, therapeutically and not in an unscientific way, and the results that you will derive from its use will produce surprise and pleasure such as you never had dreamed of.

I am meeting in my work physicians that question the advisability of using electricity in these various cases, and I find by a careful examination that the most of these physicians are not thoroughly posted as to what electricity is or its mode of action and I believe this to be a fact that in most cases the physician opposes the use of electricity more from the lack of knowledge of the remedy than from disbelief in its usefulness. Tell me if you can what other remedy will give you as positive a diagnosis of operative or non-operative requirements in the examination of pelvic troubles as electricity will, for I believe that if anything will give us a correct knowledge of the condition of these pelvic troubles, it is electricity. Referring again to my early statement in this paper, that congestion is relieved or produced, that enlargements are reproduced, and that atrophied conditions are enlarged, you have a means in electricity of proving what I already have stated—that pain may be increased or diminished by the use of either one or the other of these poles.

Supposing then a case similar to the one I have described, presents herself to the office for a re-examination. You are undecided in your own mind as to whether the case is an operative case or an office case, and you wish to know. Call in electricity to your aid. Make an intrauterine application or simply a bi-polar vaginal application, carefully, intelligently seeking to avoid anything in the treatment that would be blinding to the diagnosis, and it will not take you long to decide whether the case is one requiring an operation or whether it is one in which by patience and perseverance you will succeed in accomplishing the same object as by operation. Your operations by the knife do not always restore your patient to absolute health, neither does the use of electricity for these pelvic troubles do so, but I do believe that as large a percent can be restored to perfect health by the use of electricity as by the use of the knife. In most of these cases we are in too much of a hurry, time is too short, the dollar sign is too far away, we cannot afford to wait. "A bird in the hand is worth two in the bush," is the theory, I am afraid, that many of us go on the most of the time. Were we to take our patients, put them under hospital surroundings, give them the care, the nursing and the treatment suitable to such conditions, and not be in such a hurry, results would be far better than they

are at the present time. Why not treat these patients in a humane manner instead of ordering them sent to the operating table, there to be relieved of the offending members. Send them to the hospital where they may be carefully put under observation nursing and care, which along with the properly selected position will greatly aid in reducing any pelvic congestion that may be present. All of you are acquainted or know of cases suffering from some of the severest forms of pelvic troubles where an intercurrent disease as typhoid fever, pneumonia, small pox, or intermittent fever has necessitated the patient remaining quiet and in bed, but who upon convalescing from the intercurrent disease have found the pelvic troubles have entirely disappeared. So if we would be patient with these cases, put them into the most favorable conditions possible, I am thoroughly convinced that many of these pelvic troubles would be entirely relieved if not entirely cured. Time is an element in all of these conditions which most of us disregard utterly, but which I believe to be one of the most important factors in the treatment of these cases. Do not disregard it.

I have in mind, at the present moment, a young woman, now married whose condition was certainly not a hopeless one, but because of pain and general inability to do a man's work about the house and barn because of severe pains which occasionally troubled her, both parents as well as the patient concluded to end the business at once by the removal of all or part of the pelvic organs. The case had been progressive as well as it possibly could under the existing conditions and the amount of work which the patient was compelled to do, but because of temporary aggravation, time was not considered as an element of convalescence and an operation was consented to. Today that patient, a young married woman, is bemoaning the fact that she will never be a mother, except by the adoption of someone's else child. Had the patient been given the right kind of care, had she been put to bed, careful nursing and a period of rest amounting to weeks, yes, if necessary, months, I have no question in my mind whatever but that the future would have been different for her and happiness.

I shall not even mention any of the conditions where I believe electricity to be positively indicated, but if you will stop for a moment and consider a gain what the action is of the opposite poles of the galvanic current, you will readily understand its indications. There comes before my mind at the present time a young woman possibly a clerk in a store, a teacher, the maid working for you in the house, or the mother whose cares are many, whose complaints are as numerous as it is possible for human flesh to be heir to, whose lives are made miserable and existence itself drudgery. What can you do for a patient of this kind? She probably will tell you that she has taken medicine by the gallon if not by the barrel, that she has suffered much at the hands of many and that her troubles are

on the increase, that life is a burden and existence itself is not worth the while. This patient cannot be put to bed, the requirements of existence necessitate her constantly and everlastingly keeping at it. What are you going to do for her? What is the use of prescribing medicine?. She already has told you that she has taken it by the gallon, for years and years these same symptoms have continued, gradually becoming worse and worse. Now, let me tell you what to do. Give your patient electrical treatments. And can it be possible that two or three electrical treatments can so influence the mental condition of this woman that in a week or ten days time as the case may be your mental influence will have relieved backache, will you have caused to disappear the bearing down pains, the tenderness and soreness of which she complains, and will already have put into her thought and mind the germ, so to speak, of convalescence? I say, can it be possible that the mental impression only is the remedy that has done this, or must you give the electrical treatments a part of the credit? Mental suggestion cannot produce anemia where congestion existed, mental suggestion cannot produce atrophy where hypertrophy existed, mental suggestion cannot relieve infiltration, thickened and boggy tissues. I am willing to give mental suggestion all that properly belongs to it, but I do not believe that mental suggestion will cure a pathological condition of the tissues. It may assist greatly in relieving pathological conditions of the mind, but I do not believe that it can be made an abnormal tissue cell normal; and yet, that is the very thing you accomplish by the use of electricity.

Let every physician in the room close the fingers tightly into the palm of the hand, not too tight at first. Hold it there for two or three minutes then gradually increase your grip. Now increase it still more, now more, just as tight as the fingers can be closed into the palm of the hand. What are you experiencing at the present time? Hold the fingers there for ten minutes and what will be your experience? Now, instead of ten minutes, make it twenty. What is the matter? Are you having pain? Where is it? Is it confined to the hand alone or does it begin to extend up the arm into the shoulder? Now, just such a condition as that exists in poor conditions of dysmenorrhea. These conditions, painful dysmenorrhea, presenting themselves to you for treatment may be likened to nothing less than the tightly closed hand. The spasmodic action which occurs at the internal cervical portion of the womb can be likened to this kind of an experience. It is unstriated muscular fibre, the patient absolutely has no control over the action whatever and yet you will know that the action of the womb is constantly one of contraction and relaxation, it never is quiet. This being the case, the sensitive nerve terminals at the internal cervix becomes of the congestion and temporary retention becomes extremely responsive to such conditions and produce in the womb an auto-contraction, which,

by means of the reflex centers the patient refers the pain to almost any part of the anatomy, mostly, however, to the region of the back directly opposite the pelvic structures, the neighborhood of the anterior spinous process of the oleum, extending over the crests on either side, with further reflex action to the occipital portion and to the vortex of the head. Now with this kind of a complex condition existing, what are you going to do with your patient, for this case is only a simple illustration of many, many varieties of cases that may present themselves to you, I say, what are you going to do with them? You can prescribe your internal medication and relieve them as long as the medicine is being taken, you can prescribe all kinds of diet, external and internal nursing of every variety, and yet, your patient after all of this has been carefully seen to, still remains the same, broken in spirit and in hear because of the every present and ever continuing trouble. Now if this patient really had no pathological condition present whatever, mental suggestion might do much for her, and that there are many cases of this nature I have no doubt and do not question for a moment their existance, but with a real pathological condition, I do not believe that mental suggestion will have any effect whatever on such a patient, but, I am positive that electricity used on a patient of this kind, properly administered and the patient put under proper conditions, results will be positive and tangible.

Again let me say, that not all of these cases simple as they may be will be cured by the use of electricity, even you with your knife will not relieve all of these pathological conditions, but the greatest good will come to the greatest number of patients of this kind by the use of electricity and not by the use of the knife.

Again there presents herself to you for office examination a woman nearing the down hill of life, with a history that is very frequent in these cases. All of the symptoms described in the last case, added to that, however, irregular menstruation with at times excessive hemorrhages with great prostration and debility. Referring again to the different actions of the two poles of the galvanic curren, does it not occur to you at once that they may be of some value in a case of this nature. You need have no fear of whatever of intrauterine applications of this remedy properly used, rightly applied. They are harmless, and yet wrongfully used and wrongfully applied, they become a menace to your patient's life. But when carefully used many times their results are magical, practically without danger, with a positive action their results are positive.

Again there presents herself to you another patient whose history is practically the same as the one just described and yet a few of whose symptoms vary very materially from the one formally described. The history of a severe confinement with a protracted convalescence, or a history of severe miscarriages or abortion following either of which menstruation has become irregular, the mens-

trual flow has ceased almost entirely and in its place an occasional watery discharge is present, but all the other symptoms described in the previous case are predominating. What have you present? You recognize the condition at once by the symptoms that are present. What are you going to do? Remove the womb, the ovaries? How foolish! when possibly the latter are not involved in the least and only a part, a very small part, of the womb and that easily accessible is diseased. Why not make the attempt to cure the trouble and not excite it, leave the woman a woman and not a thing. I really do not believe it is as stylish today as it was a few years back to have the ovaries removed or to eviscerate the woman. Electricity in these cases is a remedy of real value, it is a remedy that should be tried in all cases before resorting to a surgical operation.

Now, I say again just as I told you in my paper two years ago before the Society, electricity is by no means a panacea for all ills and ills of the female pelvis, but of all remedies about which I know anything at all, electricity is the superlative. You do not cure all of your cases even by an operation. I do not cure all of my cases even by the use of electricity. But with less inconvenience, with less trouble, with less danger to the patient, a little more work on my part, a little less work on the part of the nurse, I can do with electricity all that you can do with the knife. Now of course, do not understand me that I can remove a tumor that weighs one hundred pounds from the belly of a woman by the use of electricity, but I am speaking of the cases in which electricity is applicable. It will not do the impossible, neither will your knife. But when you stop to consider the ovaries that have been extracted from the female pelvis in the years that have gone by, the emasculated women that today are bemoaning their sad condition, I say to you that in all justice to womanhood what has been done to her in the past has been a disgrace to the medical profession, and a dishonor to our ability. It is a thousand times better for a woman to have a movable though displaced womb than it is for her to have an organ in normal position with adhesions, let these adhesions be either pathological or artificial. Many is the woman traveling the world over today with the womb stitched to the abdominal wall whose sufferings might have been ameliorated without undergoing the ordeal of such an operation and its results, when you know that many and many of these cases can have all of these symptoms of which these patients complain symptomatically if not entirely relieved by the use of electricity.

EPILEPSY

W. A. BRYAN, M. D., Cherokee.

The social and economic importance of epilepsy can not be overestimated. Any disease that incapacitates 145,000 in the United States should receive serious consideration from the medical profession and more especially a disease that has such an influence on future generations. It has been estimated that if epilepsy continues to increase at its present rate, the number of cases will be doubled in thirty years. The great majority of these individuals are a total loss to the world. The epileptic occupies a peculiar position. While it is true that he can work and play during his interparoxysmal periods, he is always regarded with aversion. He realizes the nature of his dread malady and is always in a state of expectancy as regards that terrible blackness and prostration that strikes like lightning out of a clear sky. He can not share the social pleasures of his fellows on account of this sword of Damocles that is continually hanging over his head. The schools are not open to him or if he does attend he can not avoid seeing that feeling of repulsion with which he is regarded. No one wishes to employ him. He is a social outcast, an object of commiseration, a burden to his friends and oftentimes a family blemish which must be carefully concealed. And these facts contribute not a little to the evolution of the typical epileptic character. He becomes selfish, introspective, irritable, morose, apathetic. He is melancholy, feeling that the world does not treat him right, hypochondriacal because he knows that all of his misfortunes are due to his physical condition. The epileptic is a prolific source of income to the quack. He tries each new remedy advertised with new hope of a cure, only to cast it aside in favor of another which has more convincing advertising. He is unstable and unreliable and in time becomes unmanageable. I may say that the mental symptoms of ordinary epilepsy and epileptic insanity differ in degree only. The one is exaggeration of the other.

These unfortunate individuals can never take their proper place in the world and it is our duty to make their lot as happy as possible. We must train them, educate them and substitute new spheres of usefulness for those of which nature has deprived them. The usual method of dealing with an epileptic is to calmly pronounce his disease incurable, prescribe bromides and leave him to his own devices in favor of cases which are more interesting. The mystery, obscurity and great diversity of symptoms make up a problem that is well worth the time and effort spent upon its solution. We may not be able to cure the epileptic but we can make his life far happier and more useful.

The pathology of this disease is as much in the darkness as it ever was as regards any specific changes in the organism, but we are beginning to arrive at a better idea of what is included in the term

epilepsy. The clinical studies of the disease make it clear that the convulsion instead of being the only manifestation is simply the most striking of a number of symptoms. Hence our problem becomes more complex. The word epilepsy brings to mind a picture of a human being groveling in the dust, his face cyanotic, froth on his lips, every muscle tense and rigid. But there is more to the picture than this. Popular conception makes the epileptic only abnormal during his convulsions. In the interparoxysmal interval he is assumed to be a normal person. This is erroneous. Every convulsion, every psychic storm, which in fact is a substitute for the seizure, every manifestation of the disease leaves an indelible trace, a permanent disorganization of the brain cells involved in its production and he is never normal.

We now recognize epilepsy, not so much as a disease, as a syndrome and the plural term, epilepsies is more nearly correct. We have in the past prefixed the term by the causation, if known, and grouped all other cases where the etiology is obscure, under the term idiopathic. But the latter only serves to cover up our ignorance. All epilepsies are essentially the same, due to the action of the same brain cells, either by causes acting within the cells themselves or extrinsic to them. These views are embodied in the following formal definition as given by Dr. J. F. Munson, one of the eminent authorities on epilepsy: "The epilepsies are a group of similar syndromes arising by action of the cells of the central nervous system through stimulation by various agents which may be either intrinsic to the nerve cells or extrinsic or from a summation of causes in both groups, characterized by seizures in which consciousness is altered or lost, with or without motor phenomena, characterized by mental changes and certain traits of mind and character which exist independent of the seizures."

This conception of epilepsy at once puts our old drug treatment upon a false basis. We have heretofore treated the seizures by the use of sedative and have not cured the diseases but controlled the paroxysms. The fundamental idea of giving sedatives in epilepsy, as a routine measure, is wrong. Sedatives only inhibit the action of the brain cells to a stimulus without having any effect with reference to the removal of this stimulus. The rational treatment of the disease must be on an etiological foundation.

But it is in this question of etiology that we find the stumbling block. The more one studies the subject of epilepsies, the more firmly convinced will one become that there is no case of so called epilepsy without hereditary taint and a more correct term for this group considered from the standpoint of etiology would be hereditary epilepsy. This is the reason so many cases prove intractable to any and all treatment, gradually deteriorate mentally and physically and finally end their days in hopeless idioey in a hospital for the insane.

It is true that many other causes are assigned. We have histories of falls on the head, convulsions that began with dentition, intestinal disorders and eye strain. These have all been given as causes of epilepsy but if a careful investigation is made into the antecedents of the patients we will find, in the majority of cases, some instability of the nervous system which has been transmitted to him. I do not mean that we will get a history of the same disease. This, in point of fact, is not usual. But we will find some evidences of alcoholism, insanity, eccentricity, migraine, chorea or other conditions that are indicative of an abnormal nervous organization.

The great similarity between epilepsy and feeble-mindedness is striking and supports the hypothesis that both are due to the absence of some protoplasmic factor that determines complete nervous development. Such conditions as chorea, migraine and extreme nervousness are due to a complex condition of the protoplasmic factor. Individuals having these conditions have defective germ cells. They are tainted. When normal parents have epileptic children, a close search will usually reveal nervous defects in their relatives. We may lay down two propositions relative to the causation of epilepsy:

(1) There is a minimum of heredity with a maximum of exciting causes.

(2) A maximum of heredity with a minimum of exciting cause.

There is usually some exciting cause to explain the appearance of the disease but there is always the inherited tendency present.

Some statistics in this connection may be profitably presented here. Spratling has studied the histories of 1070 cases at the Craig Colony. He has found that in 56 per cent of these cases there was a definite family history of alcoholism, insanity, epilepsy, tuberculosis, feeble-mindedness or other kindred conditions. This is a high percentage when one considers that these histories are usually defective. It is extremely difficult to get good family histories in these cases. Many relatives wilfully pervert the facts in order to cover up any thing that might reflect upon themselves, the laity ordinarily regarding insanity, epilepsy and such conditions as closely akin to disgrace. Again many conditions that the lay-mind would pay little or no attention to, the trained observer would find extremely important.

In a further analysis of these 1070 cases, Spratling finds that there was a definite history of epilepsy in 16 per cent of the series. He finds that alcohol in the ancestry is a very potent cause. In 15 per cent this factor of alcoholism led to epilepsy in the child. It is a peculiar fact that in Spratling's cases there was a smaller percentage with insane histories than alcoholic but such is the case. Only 7 per cent of the total gave evidence of insanity in the family.

I have made an examination of all the epileptics at the Cherokee State Hospital and there is a greater percentage of hereditary in-

fluence than in the cases given above, but of course in a much smaller series. There are seventy-five epileptics confined in this hospital and I find a total of 66.2 per cent in which there is alcoholism, mental diseases or epilepsy in the family. This may be divided as follows: epilepsy 15.5 per cent; alcoholism 20 per cent; insanity 24 per cent.

Through the courtesy of the officers of the other three state hospitals for the insane and the institution for the feeble-minded at Glenwood, I have been able to supplement these figures by some data from the other institutions. The following tables give the results.

Mt. Pleasant 75 cases: alcoholism 11 per cent; insanity 18.5 per cent; epilepsy 5.33 per cent.

Independence 53 cases: epilepsy 22 per cent; insanity 17 per cent; alcoholism 26 per cent.

Clarinda 76 cases: epilepsy 7.89 per cent; insanity 15.78 per cent; alcoholism 2.63 per cent.

Glenwood 291 cases: epilepsy 10.65 per cent; insanity 19 per cent; alcoholism 14.77 per cent.

There are five hundred seventy cases of epilepsy confined in the five state institutions and of this number 46.1 per cent have a defective family history. This is a smaller percentage than Spratling obtained, but he included such diseases as tuberculosis, chorea, etc., while these figures take no account of anything but alcoholism, epilepsy and mental diseases.

Imperfect as these statistics are, they give some idea of the magnitude of the problem that confronts us in our own state. These refer only to the epileptics requiring state care and if we lay aside the humanitarian side of the question and look at it from an economic standpoint we can realize what these people are costing the state and will continue to cost if they are permitted to increase. True, the first cost of a sane solution of the problem will be greater, but the increase in the comfort and usefulness of the epileptic will more than repay us.

What then is the solution of this problem of epilepsy? How shall we treat the established case and what steps shall we take to prevent the propagation of the disease? I shall dismiss the drug treatment of epilepsy in a few words.

Every drug in the pharmacopeia has been lauded at some time or other as the only successful treatment for this disease and all have been discarded except the bromides. These have been our sheet anchor in the past and we will continue to rely upon them in the future. I would be very loathe to part with the bromides in treating epilepsy, but they are to be used in properly selected cases and in suitable dosage.

The old idea was to increase the amount given until convulsions disappeared or the dose was so large as to be dangerous. In either

case the patient became stuporous, apathetic and his digestion was disarranged. Many patients prefer to have a moderate number of paroxysms rather than the somnolence produced by the drug. We are using at the Cherokee State Hospital a formula as follows: potassium bromide, sodium bromide, ammonium bromide, of each 5 grains, water sufficient to make one dram.

In one dram of this mixture we get 15 grains of the combined bromides and the dose can be easily controlled. This is used in suitable cases and it is very unusual where the number of convulsions can not be controlled within the danger point when used in connection with good hygiene and suitable dietary.

Calcium, as given in the form of the lactate has been tried and some successes have been reported. My personal experience is that it is without effect. I have tried it in three cases but it did not materially change the number of convulsions or in any way affect the disease. In one case it was necessary to withdraw the drug on account of a derangement of the intestinal tract. It is used on the theory that the attacks are caused by minute hemorrhages or extravasations into the cortex, these being due to the decreased coagulability of the blood.

Borax is another time honored remedy that has many adherents. I have used it in two cases alone and in a third in conjunction with the bromide mixture. In the latter there was a decrease in the number of convulsions for a short time but they soon regained their former frequency.

The Flechsig opium-bromide treatment has been given a thorough test at the hospital but without favorable results. Flechsig advocates keeping the patient in a state of mild narcosis for six weeks. He begins with small doses gradually increasing them. At the end of six weeks the opium is suddenly withdrawn and large doses of bromides substituted.

The croctalin treatment has recently been advocated by Dr. Spangler and he has reported some good results. He uses the venom of the *crotalus horridus* and claims to have effected a number of cures.

The great fault with these methods of treatment is that they are all on a wrong basis. There is no attempt to stop the cause of the attacks but only to prevent the paroxysms themselves.

The surgical treatment of epilepsy has received much attention and is thought by the laity to frequently cure. Alexander writing in the London Lancet thinks that some cases may be cured or at least arrested by surgery. His article says in part: "Some cases of epilepsy prove intractable to medical and hygienic measures and unless arrested will terminate in imbecility and death. In these cases the motor area of the brain is covered by more or less edema of the pia-arachnoid and this so affects the cells as to predispose or cause the disease. By the operation of fenestration these edematous areas

can be drained and re-accumulation prevented and the disease frequently arrested."

But the epileptic is too frequently a degenerate with an abnormal nervous system which can not be readjusted by surgical procedure. There is a small percentage of cases caused by traumatism which may possibly be benefitted by operation and these must be done soon after the trauma before permanent injury to the cells results.

But it is not by the use of drugs and surgery that we can hope to benefit the epileptic and stamp out the disease. There is no hope for the epileptic who has his malady as the result of hereditary influences and an abnormal nervous system. It is to this class that the large majority of these individuals belong and we can only use palliative measures in our endeavor to make them happier and more useful to the world and prevent them reproducing their kind. This can be attained in two ways—segregation in colonies and sterilization. The profession must be liberal and broad minded enough to build for future generations as well as our own. This is the aim of preventive medicine.

Sterilization of this class has many opponents, but I am firmly convinced that it will assist materially in the prevention of epilepsy. The epileptic who will not consent to enter a colony should be made sterile. Those opposed to this measure advance the theory that it will give defectives an opportunity for unrestrained immorality. To these I will point out the fact that fear of conception does not prevent immorality among defective individuals and even if immorality was increased we can better afford to fight it than the alarming increase of insanity and epilepsy. Furthermore, if reproduction is prevented, this class of individuals will decrease and the question of immorality will adjust itself.

The colonization of epileptics is a comparatively new idea. The first colony was built by John Bost, a dissenting Protestant Clergyman, in 1848, at Dordgne, France. In 1866 the institution at Bielefeld, Germany was opened and is the prototype after which most of the later ones were constructed.

The great desideratum in the colonization of the epileptic is to segregate him with his own kind, to substitute a life of usefulness for one of inactivity. In order to attain these ends, the institution idea must be pushed into the back ground as far as possible. The physical make up of such an institution should resemble a village rather than a formal institution and every endeavor should be made to remove the idea of restraint. The buildings should be in groups or cottages. There should be no bars except where absolutely necessary. The chief aim should be to make his life so pleasant that he will remain voluntarily. He must be brought to realize that he is of some use in the world despite his disease and not a hopeless invalid to be pampered and protected. There must be no attempt

to stamp out individuality but so far as is consistent with proper administration, the individual tastes of each patient should be considered in his work and play. But there must be absolute control and every patient should work. This latter is a therapeutic measure that is too often neglected. The patient when at home is not permitted to do anything on account of his disease with the result that he spends his time in misanthropic introspection or in vicious idleness. I repeat that every epileptic should work. The work should be commensurate with his ability and he should be given some choice, as far as possible in the selection of his work. I have seen the number of convulsions cut in half and the mental attitude of a vicious epileptic completely changed by a few weeks of corn picking.

In order to successfully treat epileptics every phase of the patient's life should be inquired into and regulated. The whole treatment may be summed up in two words—good hygiene. The most important consideration is the diet. There must be a constant supervision over the diet of every patient. There are no hard and fast rules to be given in this matter but each case is a law unto itself. The epileptic can eat anything that he may digest and to say that this or that article must not be taken because it has a specific effect on the disease is wrong. It does not effect the attacks in any way it is because the patient can not digest it properly. The quantity of food is of far greater importance than the quality. Every epileptic, if unrestrained, eats too much and this voracious appetite seems to be one of the characteristics of the condition. And here it is that the physician must fight the epileptic and his family. He will readily swallow every nauseous dose that can be concocted and try every cure that can be devised, but let a physician attempt to cut down his quantity of food and he loudly proclaims that he is being starved. This is one of the difficulties of treating epileptics at home. It is an exceptionally intelligent and broad minded mother who can listen to these complaints unmoved without making a protest. There must be absolute control over the patient's daily life.

Constipation must be fought continually. This tendency to over-eat results in an accumulation in the intestinal tract and auto-indigestion results. This may usually be corrected to a considerable extent by a regulation of the dietary. An occasional thorough cleansing of the intestinal tract is of value. The patient should be put to bed, placed on a very restricted diet or even without food for twenty-four hours and by means of enemas and cathartics the entire intestinal tract thoroughly emptied.

The necessary length of this article precludes any attempt to thoroughly cover any phase of the subject of epilepsy. I have only tried to bring out some essential points about the disease that may be of value in our work.

In conclusion I wish to again emphasize the question of the prevention of the disease. Prevention is the keynote of modern medicine and it is our only means of eradicating this disease. We must approach the idea of prevention calmly and dispassionately, without any morbid sentimentalism, and endeavor to do the greatest amount of good for the greatest number of people. I would also register a plea for a more careful inquiry into the family histories in all cases that are committed to hospitals. Our present histories are very incomplete and we need the co-öperation of every physician that further study may be made of this question of heredity not only as regards epilepsy but in other mental diseases. Lastly, a campaign of education among the laity is an absolute necessity to the carrying out of any systematized plan for the prevention of this disease. The people must be brought to realize the significance of the mating of defectives and the influence of such mating on future generations. A desire must be created for a better and cleaner race and when such a desire becomes manifest among the majority of people we will be able to accomplish something towards the eradication of such diseases as the one discussed.

TREATMENT OF DACRYOCYSTITIS*

F. W. DEAN, M. D., Council Bluffs.

The causes given for dacryocystitis by writers on the subject are many. Whatever the cause, whether it be infection by way of the nasal duct from the nose, through the canaliculi from an ocular infection, or from traumatism, the condition which causes an inflammation of the lacrymal sac to persist and which must be remedied before a cure is possible, is a lack of free drainage from the sac through the nasal duct into the nose. The drainage may be interfered with by intra-nasal conditions blocking the lower end of the nasal duct, or by a stricture in the duct itself. The stricture may be caused by a narrowing of the lumen of the canal by reason of an encroachment on the bony walls, by cicatricial tissue resulting from a former ulcerative process or by a thickening and hypertrophy of the mucus membrane and connective tissue within the canal.

One of the first essentials in the treatment of dacryocystitis is to correct all intra-nasal pathology, putting the nasal fossa in as nearly normal condition as possible.

The treatment of acute dacryocystitis is best carried out by frequent emptying of the sac by pressure and washing and filling the sac with some antiseptic solution. I am partial to the organic silver salts, protargol or argyrol. In order to better admit the point of the lacrymal syringe, the punctum of the lower canaliculus may be

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enlarged by passing a point of the scissors into the punctum down to the bend of the canaliculus and cutting the tissues between it and the inner surface of the lid perpendicularly to the edge of the lid.

Making the cut in this way leaves the opening of the canaliculus still in contact with the eye ball and does not diminish its capability of removing the tears. I do not like the frequent probing of the nasal ducts in acute dacryocystitis. If it be necessary to keep the drain open into the nose, a silver or aluminum style may be passed into the duct and be taken out every few days to be cleaned. I believe it is only in these cases of acute dacryocystitis that the styles are indicated.

In chronic dacryocystitis there is an atresia of the nasal duct which will not yield to the washing out of the sac and to antiseptic applications. To establish drainage an opening through the nasal duct down into the naris must be made and maintained.

Bowman's probes up to sizes No. 6 or 8 can be passed without slitting the canaliculus down to the sac if the punctum is opened as I have already described.

The passing of probes of that size however does not give us the permanent results that we desire, and the benefit to the patient is not commensurate to the money spent and the torture endured.

The results secured by the introduction of larger probes are undoubtedly better and more apt to be permanent than those obtained by the small Bowman probes and yet to my mind this treatment is not all that one would wish. At best the treatment is drawn out and every treatment is a painful one notwithstanding the use of cocaine. Before passing the large probes of Theobald the canaliculus must be slit down to the sac. Be careful as we may in turning the edge of the knife so as to cut along the inner edge of the lid the long horizontal slit which is not in contact with the eye ball does not take up the tears as readily as it should and there is a tendency for the tears to overflow rather than to find their way into the sac.

The lower canaliculus is the more important in removing the fluids from the eye and my belief is that if either is to be opened in order to allow the introduction of the larger probes it is the upper one that should be slit and not the lower. The pus in the sac is usually extremely virulent and is a constant menace to the eye, which may be lost in a short time despite all treatment should any corneal abrasion occur during the presence of a dacryocystitis. I believe for this reason alone if for no other the eye should be freed from this danger as soon as possible. This can be done absolutely and with almost as little discomfort to the patient as one probing operation, by the extirpation of the sac.

Before operations on the eye, a dacryocystitis being present, it is a much safer and more satisfactory procedure to remove the sac than to cauterize the puncta or ligate the canaliculi as has been

recommended by some. A dacryocystitis complicated by trachoma, in which disease we expect to see ulcerations of the cornea occur, I think the only excuse for not dissecting out the lacrymal sac is the positive refusal by the patient to the operation.

To probe the nasal duct and to continue to probe for dacryocystitis is almost as far from the right as it is to advise applications and cleansing sprays to chronically diseased tonsils instead of advising their enucleation. The operation of removing the lachrymal sac can be made practically painless and bloodless by the injection of a weak solution of cocaine and adrenalin.

There is no necessity for a general anesthetic if this solution is injected under the skin and also deeply into the lachrymal groove around the sac. An incision beginning a little above the tendon of the orbicularis and extending down over the sac a trifle more than half an inch is made through the skin. Then by a careful dissection the tissues are separated down to the sac. The cut is held open by some retractor as Mueller's or Stevenson's.

The sac is next dissected out, the dissection being from above downward. After the sac is entirely freed from the surrounding tissues the duct should be severed as deeply as possible in the bony canal. The sac is then examined to make sure that no portion is left behind. When there has existed a dacryocystitis for some time the walls of the sac are thickened and if care is taken it can be removed in the majority of cases without rupturing it. I do not believe there is any advantage in filling the sac with any substance before the enucleation.

The bony canal should be thoroughly curetted to insure drainage into the nose, then the edges of the incision are brought together with three or four interrupted sutures and a pressure bandage applied. The bandages and stitches may be removed in four days and the patient discharged. The results of the operation are uniformly good. As soon as the irritation is removed the tearing stops or at least is much reduced. In less than a week's time the patient is cured and is relieved from the embarrassment and annoyance of constantly wiping pus from the eye. The frequent and painful probing operations are evaded. To have the diseased lachrymal sac extirpated removes from the eye a great danger from infection and would aid materially the society for prevention of blindness.

Because of these facts, I believe that in all cases of chronic dacryocystitis it is our duty to recommend and urge the enucleation of the sac without even suggesting that the ducts might be probed.

ANESTHETICS, ANESTHESIA AND THE ANESTHETIST*

G. T. McCAULIFF, M. D., Webster City, Iowa.

The subject of anesthetics is one that has been fully discussed in recent years, in both medical societies and journals, yet withal we have no branch in medical practice that is today handled with less skill than the one under discussion. For this reason I feel that there are some points in connection therewith which will bear frequent repetition, and while I may introduce none that you have not already heard, I hope at least to refresh some of the old ones and pave the way for a discussion of the subject, the importance of which is too frequently and too generally overlooked.

Centuries ago efforts were being made to produce or discover some drug or substance that would allay the pain incident to any operative procedure. But little success was attained and it has remained for the present century and practically for the period of antiseptic surgery, to bring into general and common use the anesthetic of real and permanent value.

To Morton, a dentist of Rochester, N. Y., belongs the credit of first introducing ether as an anesthetic in surgical procedure. In 1842 he extracted a tooth under its influence and in 1846 he secured permission and demonstrated its use in the Massachusetts General Hospital. From this time it rapidly came into common use.

Guthrie of Sacketts Harbor and a surgeon in the U. S. Army, made the discovery of chloroform in 1831, but it was first used as an anesthetic for surgical purposes in 1847, by Simpson in the Edinburgh Royal Infirmary.

Nitrous Oxide became a standard anesthetic in 1867, following Colton's report of 20,000 successful inhalations. While safer than either of the preceding, it is not lasting or flexible enough to meet the needs in most cases requiring general anesthesia.

Many efforts have been made by various experimenters to produce some drug or combination of drugs, safer than the ones named, but with little success, for the fact remains that chloroform and ether are today the anesthetics of choice, and probably will remain so indefinitely.

The choice of the anesthetic is based upon the indications and contraindications existing with the patient, ether being selected unless the following contraindications exist.

1. Advanced degeneration of the blood vessels such as athroma or aneurysm, in which the great increase in arterial tension produced by ether may cause rupture of a vessel.

2. Acute inflammation of the kidneys or chronic parenchymatous nephritis, particularly if there are red blood cells in the urine.

*Read before the Austin Flint-Cedar Valley Medical Society.

3. In some cases of operation upon the brain or abdominal contents, in which cerebral congestion on the one hand, with high blood pressure or vomiting on the other, may complicate the operation or produce postoperative difficulties.

4. Operations on nose and mouth, when the necessity of giving ether constantly interferes with operative procedure or produces profuse secretion of mucus or saliva by reason of irritation by its fumes.

5. Acute or chronic bronchitis, since the vapor may produce an excess of secretion which interferes with respiration during and after operation.

6. Sometimes in alcoholics, because of the great amount of ether necessary.

The contraindications to chloroform include practically all of the organic heart lesions, as myocardial degeneration, cardiac dilatation, cardiac feebleness or fatigue from emphysema or asthma, valvular disease with broken compensation, or when the heart is on the borderland of broken compensation. In aortic regurgitation it is strongly contraindicated. Lymphatic patients and those debilitated by prolonged suppuration and diabetes mellitus furnish poor subjects.

The physiological effect of chloroform upon the brain, when given by inhalation is to cause gradual decrease in the activity of the perceptive portions of the cerebrum, followed by a similar blunting of the intellectual activities, and finally to produce a quiescence of the motor portions of the cortex. The sensory tracts of the cord are depressed, and later the sensory portions of the medulla. Another step and the motor portions of the cord and medulla become depressed, followed by the abating of vital functions in these parts, and death.

The action of chloroform upon the respiratory center is depressing, due in part to alterations in blood supply of the medulla, but does not cause death by depression of this center in a healthy person, though the respiration is a good indication of the dose.

Upon the circulation, chloroform is a depressant, diminishing the cardiac power. Various research workers, including Hare, Thornton and others, have shown that the chief effect however, is upon the vasomotor center, and possibly on the muscular coats of the vessels, causing a distinct fall in the blood pressure. This is influenced to some extent by the diminished power of the heart, thus driving the blood with less power and less quantity a minute into the arteries. When the blood pressure falls, the blood supply to the medulla and respiratory center is decreased and the functional activities of these parts is diminished, partly by direct and partly by indirect effect of drug.

Ether, when inhaled, is eliminated by the lungs and kidneys. It acts chiefly upon the cerebrum—primarily benumbing sensation by depressing the perceptive centers in the posterior convolutions of

the brain; secondly, by depressing the intellectual powers, and finally by depressing the motor cortex.

The influence upon the spinal cord is exerted upon the sensory tracts. In overdose, it is depressant to the sensory portions and to the motor centers of the medulla. When inhaled it causes a rise of arterial pressure by stimulating the vasomotor center and also by stimulating the heart. In moderate amount it stimulates the heart, but in large amount it becomes a heart depressant. In poisonous amount, death is caused by failure of the respiratory center.

Before the administration of a general anesthetic, the patient should have several hours preparation. The bowels should be thoroughly emptied. The diet light, and no food within four or five hours previous. Water may be given freely to within two hours. A thorough cleansed digestive tract aids materially in the prevention of postoperative vomiting.

Both chloroform and ether should be given by the open drop method. Both should be given slowly, and chloroform especially with plenty of air. I do not believe as some do, that ether should be crowded, either at the beginning or during anesthesia. The less irritation of throat and bronchial mucus membrane during the anesthetizing, the more serene the anesthesia and postanesthesia periods. If properly administered, there is little more irritation or disturbance than from chloroform. When once relaxed, it is unnecessary to crowd the patient into the profound anesthesia so often witnessed, even in the operating rooms of some of our prominent surgeons. It is not a difficult matter, and especially with ether, to secure and to carry a patient along under deep anesthesia, but the ideal is reached only when anesthesia is securely carried through with the least amount, what might be called shallow anesthesia. Under these conditions, the patient is never in the danger zone, and usually recovering from the effects of the anesthetic before leaving the table or immediately upon reaching his bed. Experience shows that vomiting under these conditions is very much less frequent and the danger of pneumonia practically nil.

On a visit in recent years to a clinic in a well known hospital and conducted by surgeons of international reputation, I saw no less than fifteen major operations in which ether was administered by the drop method with an Oschner inhaler. Each patient was anesthetized in from seven to ten minutes and kept deeply under as indicated by the deep respiration during the operation. In most instances they were two and three hours in recovering consciousness. This appears to me to be not only useless, but a great injustice to the patient. Nausea and vomiting are the common sequence and frequently prolonged. The bronchial mucosa is much more irritated and thus the danger of postanesthesia pneumonia enhanced. The amount to be eliminated by the kidney is likewise increased and the danger of nephritis or suppression correspondingly multiplied.

This leads up to the subject of the anesthetist, whose relation to the patient during the period of anesthesia is of little less importance than that of the surgeon who wields the knife. Yet in the majority of instances, he is very much less skilled in the administration of anesthetics than is the surgeon in his line. The cause is not a difficult one to find. The surgeon, from the time he enters upon his medical studies until he launches out as a surgeon, is being constantly groomed for his special work. His four to six years in medical school, his hospital service and postgraduate work following, all under special and experienced tutors, tend to fit him for the important work he is to take up as a profession. Yet the important work of administering an anesthetic properly is quite overlooked in the curriculum of our schools. Had I depended alone and entirely upon my training in medical school, for some knowledge in the administration of anesthetics, it would have been very meagre indeed, and I would have started in the practice of medicine without ever having given a single anesthetic. I believe the majority of you could tell the same thing. Is it any wonder then that we have poorly administered anesthetics, and a mortality from same that is entirely too great? The anesthetist should have, not only a thorough didactic training in the chemistry, therapeutics, physiology and methods of administration of the various anesthetics, but practical and thorough training under professional tutors, just as the surgeon has before undertaking his work. "How often it depends upon the anesthetist's ability, whether or not a patient undergoing an operation is to be spared an ether eye, pleurisy, pneumonia, acute nephritis, or even death."

If any of us were to be anesthetized, we would certainly want some one who had been specially trained along this line, because we appreciate the dangers incident thereto. We have no right then to ask our patients to submit to dangers to which we would not submit ourselves.

I believe that every medical school should have a chair of anesthetics, and that as thorough instruction should be given in that branch as in any other. I believe also that every hospital where general anesthetics are employed, should have the services of an expert anesthetist. Under these conditions, the risks of anesthetic complications would be diminished, if not entirely removed, and we would be doing by our patients as we would be done by.

THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

EDITORIAL

The Future of the Medical Profession.

The Iowa Medical Journal for August contains a paper with the above title, by Dr. J. W. Kime. There is much in this paper worthy of careful consideration. The Doctor points out that we are fairly entering a period of trouble and perplexity which it will be difficult to understand and which will bear heavily on many individual members of the medical profession. The people somehow seem to feel that the profession is not performing its whole duty and the profession feel that it is not receiving its fair share of material benefits.

There has always been a belief that medicine was altruistic and had but small relation to commercial undertakings, that it had to do with the most unfortunate side of life and with people who had but little more than the necessities of life. We are familiar with addresses of laymen before bodies of medical men, who deal with humanitarian side of a physician's calling and who say so little about conditions which are favorable to six cylinder seven passenger touring cars. This is but a reflex of public sentiment that a Doctor should care but little about money but a good deal about the welfare of his sick patient. The physician takes a slightly different view and apparently thinks much about the dollar. It is perhaps due somewhat to this divergent viewpoint that the layman looks with suspicion upon the urgent demands for health and sanitary legislation as being some new scheme to secure increased income instead of lessening it. Magazine articles frequently appear favoring some plan of lessening the burden of sickness and accident to the wage-earner, and point with favor to paternalistic schemes of the older countries in providing medical services for the industrial classes.

A degree of restlessness has grown up among wage-earners who have felt the burden of taxation and the inequality between themselves and the more favored classes. In a spirit of helpfulness, some of the more advanced foreign governments are providing plans for medical services to wage-earners by industrial insurance schemes. In England until recently under the agency of what is known as the Friendly Insurance societies, contracts were made for medical services at a very considerable reduction to the industrial classes. In England, to still further reduce the burden of sickness and accident, the government has itself provided for insurance for those earning less than \$800.00 a year; thus the Friendly Insurance companies have been replaced by the government for all people receiving less than the sum above mentioned, per year. Those receiving larger incomes may still enjoy some of the Friendly Insurance benefits. The pro-

fession in England felt that it was in bad enough ways under the contract system of the Friendly Insurance companies, but when the government took up the matter and reduced the amount of compensation that medical men received, a revolt occurred, and about 27,000 physicians refused to accept the Government's proposition, but the Government made a slight concession and the doctors were forced to accept it or find themselves out of practice. In Germany a more elaborate plan exists, and the compensation granted the medical profession is less than in England. In America, the wage-earner has been left to take care of himself except insofar as the formation of unions is concerned. Now we are beginning to see signs everywhere of a disposition to adopt the European idea of the state paying for the care of injured and sick people among the industrial classes, by some sort of a compensation and insurance act, and to fix the fees of physicians doing corporation practice. It is probable that the time is not very far distant when insurance acts like those in England and Germany will be adopted in this country and while the Government or State pays the fees for the injured and sick belonging to the industrial classes, the amount provided for fees to the doctors will be small.

A number of lay journals have been saying recently that the government care of the injured and sick in Europe is of great benefit to the working people, and recommends its adoption in this country. From an economic and humanitarian point of view, no criticism can be made, but when it comes to the medical bearing the great burden of it by very greatly lessened fees, there is certainly an element of injustice in it, but the plea is made that legislation shall be for the greatest good to the greatest number, and it leaves the medical man but small ground to stand on. The St. Paul Medical Journal recently in an editorial upon this subject, advised the medical profession to take a serious view of the situation and propose some plan to meet the conditions in anticipation of plans which will be worked out by economists who are not often found doing things to increase the benefits of the medical profession.

A Fee Division Story From the British Medical Journal.

In some countries it seems to be understood that if a physician calls in a surgeon to perform an operation the fee for the operation is to be shared. We have never heard of this being done in England, nor is it thinkable that the idea has ever been entertained in any part of our far-reaching Empire. From remarks made by the President at the inaugural meeting of the newly formed American College of Surgeons, the custom appears to be common in the United States. That it obtains widely in France seems to be generally admitted, but that it is apparently not recognized in Switzerland, the following story shows: A physician of high position in Paris had under his care a wealthy patient, for whom he considered that a very serious

operation was necessary; and for the performance of this he deemed it best to obtain the services of an illustrious surgeon in Switzerland, whom he then called to Paris by urgent summons. On the surgeon's arrival the case was seen in consultation, and the operation was duly agreed upon and performed. In an interview which took place immediately afterwards, the physician told the surgeon that, having called him in to operate, he should expect an even division of the fee. The surgeon, greatly taken by surprise, not only by the demand but also by the discovery that such a custom was tolerated in the sister republic, expressed his agreement, saying that on his return home he would at once send the memorandum of his fees to the patient and faithfully discharge his obligation to the physician. Next day, therefore, he wrote to the patient saying that his fee was ten francs; and of this amount he straightway forwarded one-half to his French confrere.

School For Health Officers of Harvard University and the Massachusetts Institute of Technology.

On November first the Boston School for Health Officers was opened. These institutions recognized the importance of specially trained sanitarians and have joined in providing a special course. The Institute of Technology has more strongly developed the engineering side and will furnish the instruction in Sanitary Engineering, while Harvard will co-operate on the medical side. This joining of forces will develop a strong school which will ultimately be of great value to the Public Health Service of the National Government and the State Municipal Boards of Health which are constantly widening the scope of their activities.

The School for Health Officers will have a separate organization and will not have any official connection with the Graduate School of Medicine.

There will be an administrative entity under the charge of an Administrative Board of three. The members of this board are Prof. W. T. Sedgwick of the Institute of Technology, Prof. Milton J. Rosenau of Harvard Medical School; and Prof. Geo. C. Whipple of the Department of Sanitary Engineering, Harvard University.

Responsibility in Private Hospitals.

A very important medical legal case went to the supreme court of North Dakota, has come back with the affirmation of a judgment for the plaintiff of \$1,800 damages for a burn from a hot-water bottle. The defendant maintained a private hospital, and through the carelessness of a nurse, or some other employee, the patient, the plaintiff, who was operated on for appendicitis, was put in bed after the operation and was laid on a hot-water bottle. The result was a severe burn, and the supreme court finds that, as the patient was practically unconscious immediately after the operation, and

either was, or was not, negligent in his after-treatment of himself, that the defendant who was the owner of the hospital, was liable as a master for acts of servants and nurses. This decision is a warning that all private hospitals should remember.

If such an injury or accident or negligence should occur in a hospital that is in part or wholly a charitable institution, it is hardly likely that a judgment could be secured against such an institution. The only reason is, that it is a public and presumably a non-paying institution, as against a private hospital that is maintained for gain.—(The Journal Lancet.)

Liability For Leaving of Sponge in Abdominal Operation—When Responsibility Cannot Be Put On Nurses.

Effects of Pleadings

(Palmer vs. Humiston (Ohio), 101 N. E. R. 283).

The Supreme Court of Ohio affirms a judgment for \$5,000 damages rendered in favor of the plaintiff for alleged malpractice in negligently leaving a sponge in the performance of an abdominal operation. The court "says that the pivot of this case was in the particular pleadings, especially the defendant's answer wherein he admitted the contract to perform the surgical operation, and admitted that "in the performance of said operation it was necessary that certain gauze or cheese-cloth sponges be used." The issues of a case are defined by and confined to the pleadings. Under the pleadings of this case the use, care and removal of such sponges were a part of the operation contracted for. In such a case the use of the sponge becomes a part of the operation, it must follow as a corollary that the removal of the sponge at the end of its use becomes also a part of that operation.

By the way of further illustration and argument, suppose that in the operation a large number of instruments were used, and, in addition to keeping tab on the number of sponges, the head nurse or some third party had kept tab on the number of instruments used and placed within the body, and had made an error in the count, whereby one of the instruments was left in the body; would it be seriously contended that this was not a part of the operation, and that the surgeon was not liable, but that the nurse alone was liable?

The defendant, therefore, having admitted the contract to perform the operation and the use of the sponges as necessary thereto, assumed the full measure of professional responsibility, which is the average care and skill of the profession at the time and in the place of the operation, which must include everything connected with the operation, the use of foreign substances, and also the removal of those foreign substances when the operation is finished."

Southern Medical Women Organize.

The Association of Southern Medical Women, dedicated to the

furtherance of public health campaigns in the South, was inaugurated, November 18, at Lexington, Ky., as an auxiliary to the Southern Medical Society. Dr. Lillian H. South, Bowling Green, Ky., was elected president and Dr. L. Rosa C. Gantt, Spartanburg, S. C., secretary-treasurer.

The Added Responsibility of the Surgeon When Called on to Treat Surgical Lesions in Their Earlier Stages.

Under this title, Dr. Joseph C. Bloodgood of Johns Hopkins writes a notable paper in the Journal of A. M. A. for September 20, 1913.

The public interest and education which will come to the laity on account of the much now being written in popular magazines relative to the need of early care of suspicious lesions makes this paper a most timely one. To date, we know that the only way to eradicate cancer is to do thorough surgery early and to do this means early diagnosis. To this end, the public education aims to have suspicious conditions brought to the surgeon in the safe stage. If the laity responds to this appeal, physicians and surgeons are going to see cases, many of them, when the diagnosis is not easy. It is well known that the easier the diagnosis, the worse the prognosis.

Dr. Bloodgood appeals to the surgeon to be prepared to diagnose early.

By an array of carefully compiled reports and statistics, he makes clear the possibility of early diagnosis and the probability of a much better prognosis. A majority of the mistakes in diagnosis are due not to poverty of methods, but to neglect or ignorance of well established clinical and laboratory tests.

Shall the people force the profession, or shall the profession educate itself and be prepared for this added responsibilities.

1914 Session.

Look for the "Preliminary Program" in the March Journal. Dr. Lee Wallace Dean announces that the address on Medicine, will be given by Dr. Hugh T. Patrick, Chicago. Subject—"Some Common Causes of Headache."

The Committee on Arrangements met in Sioux City, Monday, January 27th, 1914, to plan for the 63rd Annual Session to be held in Sioux City, May 13, 14, 15, 1914.

The following arrangements were made:

Headquarters, "The Martin"
 General Session, The Assembly Hall of "The Martin"
 Registration; House of Delegates; Eye, Ear, Nose and
 Throat; Exhibits "The West"
 "The Model Laboratory for the General Practitioner..." "The West"

By Dr. Henry Albert.

Reserve Your Room Early.

To the Editor:—

Your editorial in regard to Malpractice Insurance in Iowa secured my immediate attention. I am taking the trouble to write you just what I think of this matter knowing that anything which comes direct from the "firing line" (so to speak) will be well received. I have had two threatened suits in my practice during the past five years which I was only able to prevent coming up in court by the exercise of a lot of common sense, tact and trouble and I do not expect to be so fortunate next time. I am in perfect accord with the plan favoring making it optional with the doctors whether they shall pay an assessment to cover possible malpractice suits for damages but I would have this protection the very best possible irrespective of the charge so long as that charge is somewhere within the pocket book of men doing risky kinds of work. At the present (as I see it) the doctor with a little property and doing surgery, according to your published statement as well as my own observation, is practically at the mercy of any one who gets an opportunity to bring suit. A judgment in court of from \$5000.00 to \$8000.00 would be very apt to wipe out the average doctor financially, a result which to him would be almost irreparable. The mere state defense does him therefore little good if a jury should award any kind of a verdict against him. For that reason any company which proposes to indemnify the holder of a policy against a judgment or loss imposed by law is going to have a large following for the very reason that it attempts to fully cover the ground. Only a few weeks ago I took out an Employer's Liability Policy to cover some working conditions about the office and it does not seem quite fair that the same consideration should not be extended to the actual labor of the physician himself. I cannot help but feel that eventually we are going to find some way out. The Medical Defense of the State Society has done and is doing splendid work but there is still a gap to be bridged before a busy practitioner is going to feel quite safe as he goes about his professional duties under all sorts of conditions.

Respectfully,

H. G. Langworthy.

Dr. J. W. Shuman, Sioux City, Iowa.

Dear Doctor: I take the liberty of calling your attention to a serious miscalculation in your article on "The Present Status of Vaccine and Serum Therapy" as printed in the "Journal of the Iowa State Medical Society" of Jan. 15, 1914. On page 437 it states that if 1 cubic mm contains 1,000,000 bacteria, 1 cubic cm would contain 10 million. It should be 1,000 millions, as the relative contents of cubes are to each other as the cubes of their respective sides ($10 \times 10 \times 10 = 1000$). I mention this because some one in making an autogenous vaccine, by following your article without making the calculation for himself, might be led into injecting 100 times more bacteria than he intended.

Yours truly,

George Minges, Dubuque.

Announcements.

The physicians who made a Study Tour of Europe last year under the presidency of Dr. William B. De Garmo of New York, have organized into a permanent body to be known as the "Travel Study Club of American Physicians". A constitution and by-laws have been adopted and the following officers elected: president, Dr. Louis Livingston Seaman, New York; vice-presidents, Dr. William B. De Garmo, New York, Dr. Edward B. Heckel, Pittsburgh, Dr. Howard Van Rensselaer, Albany; secretary—

treasurer, Dr. Richard Kovacs, New York; executive committee, Dr. F. H. Albee, Dr. S. Breitenfield, New York, Dr. A. J. Crowell, Charlotte, Dr. H. F. Foss, Philadelphia, Dr. J. P. Lord, Omaha, Dr. J. F. Percy, Galesburg, and Dr. John Punton, Kansas City.

The Travel Study Club plans for a 1915 Tour to the A. M. A. meeting, the San Francisco Exposition, Honolulu, the Philippines, China and Japan.

The Board of Regents of the American College of Surgeons meets in New York at the Waldorf-Astoria January 9th at 10:30 A. M. for the election of officers and the approval of the enclosed list of fellows and other business.

XII INTERNATIONAL CONGRESS OF OPHTHALMOLOGY.

ST. PETERSBURG. July 28, August 2, August 10, August 15, 1914.

OFFICE: OPHTHALMIC HOSPITAL, MOCHOWAJA, 38.

In order to execute the preparation of the Congress which stands under the protection of His Majesty the Emperor, a centralbureau was founded in St. Petersburg.

The members of this bureau are: the professors of ophthalmology from our universities, representatives of ophthalmological societies, as well as oculists from several important towns of the Empire.

The centralbureau took care to invite renowned oculists from all civilised states as corresponding members. All those members from the international organisation committee.

According to a sympathetic custom and in recognition of our deferential homage to the committee of the preceeding Congress in Naples, we have conferred the presidency of honor to the eminent colleague Professor Arnaldo Angelucci (Naples).

In the regulation of the XII-th Congress, joined here, one has taken into consideration the precepts adopted at the X-th and XI-th Congress.

Until now the official languages of Congresses have been: English, French, German. In Naples one had to accept also Italian and Spanish as official languages. This time, we unite with them the Russian language.

Making such a concession we request the authors who want to make a communication, to express the principle ideas, thesis and conclusions of their work in French; otherwise it is impossible to discuss, which is the principal aim of the Congress.

We request you to have the amiability to transmit in time your participation in the Congress, directly or through intervention of corresponding members from your country. We hope that you will take an active share in the works of the meeting in St. Petersburg.

All informations and circulars which the organisation of the Congress gradually requires will be sent to you by one of the representatives of your country.

Professor L. G. Bellarminof.

President of the centralbureau and of the international organisation committee.

Corresponding members for: United States of America.

Dr. A. Knapp, New York. Dr. Edmond Blaaw, Buffalo. Prof. G. E. de Schweinitz, Philadelphia. Prof. Adolph Barkau, S. Francisco. Dr. W. H. Luedde, St. Louis. Dr. Juan Santos Fernandez, Habana, Cuba.

Rules For the Congress.

Members who want to communicate reports to the Congress are obliged to send off the manuscript with the inscription fee to the central bureau in St. Petersburg, Ophthalmic Hospital, Mochowaja 38 to the gen-

eral Secretary Dr. Th. Germann not later than the 1st of February 1914. The reports must be written in one of the official languages of the Congress: in English, French, German, Italian, Spanish or Russian; the extension of each work must not pass over 5 pages, the usual length of reports on the preceeding congress. The manuscript must be written with the Machine.

The inscription fee of the Congress is 25 francs for the members of the Congress and 10 francs for each member of their family. The participations and communications concerning the Congress must be sent to the central bureau St. Petersburg, Ophthalmic Hospital, Mochowaja 38, to the secretary Dr. Th. Germann.

The card of admittance which the members of the Congress will receive will be personal. A later notification will indicate what rights and advantages this card will give: entrance into museums, reduced railway fares and other facilities during the sojourn.

Tenth Annual Conference of the American Medical Association on Medical Legislation and Medical Education, called by the Council on Health and Public Instruction and the Council on Medical Education, Congress Hotel, Michigan Avenue and Congress Street, Chicago, February 23 and 24, 1914.

Synopsis of Program:—

1. Recent Efforts for Sex Education. Dr. Wm. F. Snow, Secretary, American Social Hygiene Association, New York City.
2. Wisconsin's Experiment in Marriage Legislation. Dr. C. A. Harper, Secretary, State Board of Health, Madison.
3. Public Education Through the Daily Press. Dr. J. W. Pettit, Ottawa.
4. Public Education Through State and County Health Boards. Dr. W. S. Rankin, Secretary, State Board of Health, Raleigh.
5. Recent Attacks on Scientific Research. Dr. W. W. Keen, Philadelphia.
6. Sixty-Seven Years of Legislation. A Criticism and a Program. Dr. Frederick R. Green, Secretary, Council on Health and Public Instruction.
7. The Danger to the Maintenance of High Standards from Excessive Formalism, by President A. Lawrence Lowell, Harvard University, Cambridge.

Discussion—Hon. John N. Finley, LL.D., Commissioner of Education of the State of New York, Albany, and Dr. Victor C. Vaughan, President-Elect of the American Medical Association, Ann Arbor.

8. Administering the Year in Physics, Chemistry, Biology and a Modern Language, Dr. Richard H. Whitehead, Dean of the Medical Department of the University of Virginia, Charlottesville.

Discussion—Dr. John L. Heffron, Dean, Syracuse University College of Medicine, Syracuse.

9. Hospitals and Their Relations to Medical Colleges and the Training of Interns, by Dr. Christian R. Holmes, Cincinnati.
10. Registration Under the Canada Medical Act, by Dr. R. W. Powell, Registrar of the Medical Council of Canada, Ottawa.
11. Medical Licensure in the United States, by Dr. J. McPherson Scott, Secretary of the Maryland State Board of Medical Examiners, Hagerstown.

New and Nonofficial Remedies.

Since publication of New and Nonofficial Remedies, 1913, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Agglutinating Sera for Diagnostic Purposes.—These are the sera of animals (horses) immunized against various bacteria. For use a solution is added to a suspension of the bacterium to be tested, and after incubation for a certain period the mixture is examined.

Agglutinating Serum for the Identification of *Bacillus Paratyphosus* A.—Intended for use by the macroscopic method. H. K. Mulford Co., Philadelphia, Pa.

Agglutinating Serum for the Identification of *Bacillus Paratyphosus* B.—Intended for use by the macroscopic method. H. K. Mulford Co., Philadelphia, Pa.

Agglutinating Serum for the Identification of *Bacillus Typhosus*.—Intended for use by the macroscopic method. H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., Nov. 1, 1913, p. 1630).

Antistreptococcic Vaccine (Scarlatina Prophylactic).—For description of *Streptococcus Vaccine* see N. N. R., 1913, P. 226). The Abbott Alkaloidal Co., Chicago.

Strepto-Bacterin (Scarlatina Bacterin) Polyvalent.—For description of *Streptococcus Vaccine* see N. N. R., 1913, p. 226. The Abbott Alkaloidal Co., Chicago, Ill. (Jour. A. M. A., Nov. 15, 1913, p. 1811).

Silk Peptone "Hoechst".—Peptone made from silk and standardized to a uniform rotatory power. It is used for the detection of peptolytic ferments, either by changes in optical activity or by the precipitation of tyrosin produced by its digestion. Farbwerke Hoechst Co., New York (Jour. A. M. A., Nov. 15, 1913, p. 1811).

Acne Bacterin Polyvalent.—For description of *Acne Vaccine* see N. N. R., 1913, p. 221. Abbott Alkaloidal Co., Chicago.

Coli-Bacterin Polyvalent.—For description of *Bacillus Coli Vaccine* see N. N. R., 1913, p. 221. Abbott Alkaloidal Co., Chicago.

Friedlander Bacterin Polyvalent.—For description of *Friedlander Vaccine* see N. N. R., 1913, p. 222. Abbott Alkaloidal Co., Chicago.

Gonococcus-Bacterin Polyvalent.—For description of *Gonococcus Vaccine* see N. N. R., 1913, p. 223. Abbott Alkaloidal Co., Chicago.

Pneumo-Bacterin Polyvalent.—For description of *Pneumococcus Vaccine* see N. N. R., 1913, p. 224. Abbott Alkaloidal Co., Chicago.

Staphylo-Acne-Bacterin Polyvalent.—For description of mixed vaccines see N. N. R., 1913, p. 224. Abbott Alkaloidal Co., Chicago.

Staphylo-Albus-Bacterin Polyvalent.—Abbott Alkaloidal Co., Chicago.

Staphylo-Aureus-Bacterin Polyvalent.—Abbott Alkaloidal Co., Chicago.

Staphylo-Bacterins (Human) Albus-Aureus-Citrus.—For description of *Staphylococcus Vaccines* see N. N. R., 1913, p. 225. Abbott Alkaloidal Co., Chicago.

Strepto-Bacterin (Scarlatina Bacterin) Polyvalent.—Abbott Alkaloidal Co., Chicago.

Antistreptococcic Vaccine (Scarlatina Prophylactic).—Abbott Alkaloidal Co., Chicago.

Strepto-Bacterin (Human) Polyvalent.—For description of *Streptococcus Vaccines* see N. N. R., 1913, p. 226. Abbott Alkaloidal Co., Chicago.

Typho-Bacterin Polyvalent.—Abbott Alkaloidal Co., Chicago.

Typhoid Prophylactic.—For description of *Typhoid Vaccine* see N.

N. R., 1913, p. 227. Abbott Alkaloidal Co., Chicago. (Jour. A. M. A., Nov. 22, 1913, p. 1900).

Arheol.—Arheol is santalol, the chief constituent of sandalwood. Its action is the same as that of sandalwood oil, but is claimed not to cause disturbance of the stomach or the kidneys. Arheol is marketed only in the form of Arheol Capsules, 0.2 Gm. Alexandre Astier, Paris, France (Jour. A. M. A., Nov. 22, 1913, p. 1900).

BOOK REVIEWS

A Text-Book of Physiology for Medical Students and Physicians by William H. Howell, Ph. D., M. D., Cc. D., LL. D. Professor of Physiology in the Johns Hopkins University, Baltimore. Fifth Edition, thoroughly revised. 1000 pages, illustrated. W. B. Saunders Company, Philadelphia and London. Cloth \$4.00.

In no subject more than in physiology has the results of the large amount of research work, which has been carried on in the past few years, been more instrumental in causing a revision of ideas and theories. To keep a text-book abreast with the many changes is no easy task. Prof. Howell has succeeded admirably in this difficult task and in the fifth edition of his book on Physiology he has revised the subject matter to meet the changes that have been made as the result of the experimentation which has been done in the two years since the fourth edition of the text was printed.

As the author indicates in his preface the most important changes relate to the subject of metabolism and this section has been rewritten to accord with recent investigation. To show the extent to which this subject has been affected by recent work the author devotes a paragraph to the work of a number of investigators who claim to show that the animal as well as vegetable organism is capable of building up protein material from inorganic substances. Other changes are to be noted in such sections as those dealing with internal secretions, Cardiac physiology, Intestinal movements, etc., but they are not so prominent as those dealing with metabolism.

It is not possible in a text designed as this one is for both students and physicians to include all the theories advanced for the explanation of physiological phenomena without making it too voluminous and causing the reader to become lost in the maze of conflicting ideas. Dr. Howell has, however, clearly stated the more important theories as well as given the experimental dates upon which these have been founded. In many cases where there has been a rather large amount of conflicting data he has carefully given the conclusion which our present knowledge will warrant and has thus guided the reader, less familiar with physiological literature, to a better understanding of the problems as they stand to-day.

The up-to-datedness and completeness of the subject matter together with the clear and most interesting way in which it is expressed make this text the best of our Physiologies written in the English language.

Blood Pressure. From the Clinical Standpoint. By Francis Ashley Faught, M. D., of the Medico-Chirurgical College, Philadelphia. W. B. Saunders Company, 1913. Philadelphia and London. Octavo of 281 pages. Illustrated. Price \$3.00 net.

This is a book that the present day physician will welcome. During the past five years instrumental means of studying blood pressure has developed with great rapidity, but the full value and application of the sphygmomanometer is scarcely understood by the general practitioner today, partly due perhaps to the want of a suitable treatise on the subject.

The book contains first a chapter on the physiology of the circulation; then two chapters on the instrument itself, describing the different kinds in use, followed by a chapter on the sphygmomanometer and methods of its use, including factors influencing blood-pressure; two chapters on the terms, definitions, climatic and radical influences, etc. Chapter Seven—The Relations of Blood-Pressure to Athletic Life and Exercise. Chapter Eight—and Chapter Nine—Hypotension. Chapter Ten—Arteriosclerosis.

Very interesting and extremely important discussion on the value of a study of blood pressure in the diagnosis of diseases of the kidney and of myocardial degenerations will be found in chapters 11 and 12. A thoughtful reading of these two chapters will greatly aid the practitioner in reaching a fairly correct pathologic diagnosis and be a helpful means of correct treatment and a safe prognosis. There are some suggestive studies in relation to blood pressure in acute and chronic infections, also in obstetric and surgical practice. The practitioner will find his knowledge of his cases and particularly his knowledge of his patient very materially increased by the routine use of the sphygmomanometer, and nothing will be more helpful than the guiding influence of this book. There are many useful things not mentioned in this review to be found in this work on clinical blood pressure.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia-Medica in the Jefferson Medical College, Philadelphia. Assisted by Leighton F. Appleman, M. D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. Lea & Febiger, Philadelphia and New York. Six dollars per annum.

This, the September number, has four contributors: William Ewart, M. D., F. R. C. P., Diseases of the Throat and its Viscera, including the Heart, Lungs, and Bloodvessels. Wm. S. Gottheil, M. D., Dermatology and Syphilis. Edward P. Davis, M. D., Obstetrics. Wm. G. Spiller, M. D., Diseases of the Nervous System.

Ewart presents an exhaustive review of Pulmonary Tuberculosis of 80 pages. This review is based on the completion of a tuberculosis census at Ilford, England, suggested by Dr. Ewart in 1909 and carried out by a most painstaking and learned "examination for soundness as a part of every clinical overhauling a fortiori at the school." These 80 pages should be read by everyone interested in this subject, which of course includes the entire medical profession. The author need not apologize for the length of his communication.

Among other interesting things considered under the division "Obstetrics" is a short review of Diseases of the Thyroid Gland Complicating Pregnancy. It is asserted that either hypothyroidism or hyperthyroidism may exist; that hypothyroidism is a not infrequent accompaniment of sterility, and in some cases thyroid extract with a nitrogenous diet and tonic doses of strichnia will be followed by conception. In relation to hyperthyroidism as a complication to pregnancy, it is not often seen. If it does occur the patient can often be brought through her pregnancy to term by a carefully selected diet. Other valuable suggestions are offered in this connection. An interesting review of *Bacillus Coli Communis* Infection during Pregnancy-Pyelitis, Appendicitis, etc., complications often of great danger requiring the most carefully considered treatment. Bacteriology of the Vagina, Influence of Douches, are reviewed from the standpoint of scientific and practical treatment. A very ex-

haustive review of Labor and its Complications followed by a review of Obstetric Surgery, gives this section a value to the general practitioner difficult to overestimate, and is recommended to be read carefully.

A Practical Treatise on Medical Diagnosis. For Students and Physicians. By John H. Musser, M. D., L. L. D., Late Professor of Clinical Medicine in the University of Pennsylvania, etc. Sixth Edition revised by John H. Musser, Jr., B. S., M. D., Instructor in Medicine in the University of Pennsylvania; Assistant Physician to the Philadelphia Hospital, etc. Octavo of 793 pages with 196 engravings and 27 colored plates. Lea & Febiger, Publishers, Philadelphia and New York, 1913. Cloth \$5.00 net.

The late Dr. John H. Musser was so well known wherever medical books are read, that no introduction is necessary. Few men had reached such high distinction in diagnosis and treatment. The work during the elder Dr. Musser's life time, had gone through five editions, and now after eight years a sixth edition is offered to the profession after being brought up to date, which means of course that the book has been almost entirely rewritten. Such has been the advancement in medical science. The son has retained the general plan of the work which gives the book the distinctive Musser quality. The distinctive value of the work to the young physician just entering upon his career, is the logical manner the subject of diagnosis is introduced. Our own observations are to the effect that one important reason why there are so many poor diagnosticians is the fact that the physician did not begin early to work up his cases in accordance with a definite plan. The time finally comes when the trained diagnostician may "cut loose" from the painstaking routine and go directly to the essence of the case, otherwise his examinations are stumbling and uncertain. It goes without saying that the older physician will obtain great help in working out his cases by following the methods of examination and the logic of a master-mind trained by an immense experience and fortified with a knowledge of instruments of precision. Supplemented with laboratory methods of inquiry, every practitioner will find when he examines and studies this book, that this investment is a good one.

Materia Medica, Pharmacology, Therapeutics and Prescription Writing. For Students and Practitioners. By Walter A. Bastedo, Ph. G., M. D., Associate in Pharmacology and Therapeutics at Columbia University. Octavo of 602 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$3.50 net.

As the author states in his preface, we are at the dawn of a new era of simple and practical therapeutics, an era in which knowledge will supplant credulity, on the one hand, and skepticism, on the other, and in which fewer drugs will be used but better treatment given.

We believe the author is correct in his statement, practitioners have for long depended on the statements of drug houses and exaggerated advertising literature only to find that the claims could not be substantiated. The time is ripe for practical teaching in exact therapeutics. We believe that a book of the character of this one—complete, concise, compact as is this one—will be welcomed by the physician.

Recognizing the importance of digitalis and the abundant literature concerning it, thirty-eight pages are devoted to a full and free discussion of its merits. Numerous pulse tracings are shown. The work being done by the A. M. A. Laboratory in investigating this drug, makes this a most important chapter.

Epinephrine and pituitary extract are considered carefully.

We have read with profit the chapters on anesthesia. The relative values and importance of the various anesthetics are ably presented.

Alcohol is most ably discussed, as indeed are all the important drugs. The manner of presenting the subject is appealing and we have enjoyed reading the book, and can most heartily recommend it.

Treatment of Internal Diseases. For Physicians and Students. By Prof. Norbert Ortner of the University of Vienna. Edited with Additions by Nathaniel Bowditch Porter, M. D. Assistant Professor of Clinical Medicine at Columbia University, N. Y., Visiting Physician to the New York City Hospital and to the French Hospital. Translated by Frederick H. Bartlett, M. D., Instructor of Children's Diseases at Columbia University and Attending Physician to the Babies Hospital.

Second Edition in English. Revised and Reset. From the Fifth German Edition. J. B. Lippincott, Philadelphia and London.

Price \$5.00.

This is a book of 643 pages devoted to therapy, including drugs, diet, exercise, hydrotherapy, etc. Very little is said about etiology, pathology, or symptomatology. The author presumes a knowledge of the pathology and diagnosis of disease and furnishes to the physician a direct and comprehensive method of treatment of the diagnosed cases as they come to him. The book is not a compendium of treatment but a full exhaustive means of managing diseased patients, for instance, 73 pages are devoted to the therapy of the circulatory organs; 48 pages to the diseases of the genito-urinary tract; 56 pages to the therapy of diseases of metabolism; and 100 pages to diseases of the respiratory system, etc. The table of contents gives 16 classes of diseases treated, with many subdivisions. Prof. Ortner has certainly furnished to the profession a most valuable everyday aid to the profession and one that will be greatly appreciated.

The Surgical Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. October 1913. Published Bi-Monthly. W. B. Saunders Company, Philadelphia and London. Price per year \$8.00.

The famous work has now become so well known to the profession that an extended review seems hardly necessary. This number contains 17 subjects of which we may mention "Operation for Inguinal Hernia"; some valuable statistics from Italian sources and the technic of Dr. E. Wyllis Andrews, operation edited by Dr. Andrews himself and beautifully illustrated. The second subject "Appendicitis" Dr. Murphy appends some comments on suppurative cases which are of the greatest value, in fact the best we have seen, and should be read over and over again until they have sunk deep into the minds of those who treat these cases. A third very valuable contribution is the discussion on "Osteitis Fibrosis", and a fourth on "Fecal Fistula".

In these clinics the operative work is of course the best, but when Dr. Murphy turns from the operating table and indulges in comments touching the principles involved and presents them in his forceful way, the value of the clinic is greatly enhanced.

Clinical Diagnosis and Ureanalysis. By James R. Arneill, A. B., M. D., Professor of Medicine and Clinical Medicine in the University of Colorado, and Physician to the Denver County Hospital and the St. Joseph and St. Luke's Hospitals of Denver. New (2d) edition, revised and enlarged. 12mo., 270 pages, with 83 engravings and a colored plate. Cloth,

\$1.00, net. The Medical Epitome Series. Lea & Febiger, publishers, Philadelphia and New York, 1914.

A very handy manual, replete with condensed information. Well arranged and amply illustrated.

Anatomy and Physiology—A Text-Book for Nurses. By John Forsyth Little, M. D., Assistant Demonstrator of Anatomy, Jefferson Medical College, Philadelphia. 12mo., 483 pages, with 149 engravings and 4 plates. Cloth, \$1.75, net. The Nurses' Text-Book Series. Lea & Febiger, publishers, Philadelphia and New York, 1914.

This book presents, in a concise manner, all the essentials of anatomy and physiology which are of use to the nurse.

The text is clear and easily read. Many of the illustrations are from Gray. A list of questions at the end of each chapter assists the memory by calling direct attention to the leading points. The use of black face type makes prominent the important subjects. A good text-book for the nurse.

Essentials of Gynecology. By Edwin B. Cragin, M. D., Professor of Obstetrics and Gynecology, College of Physicians and Surgeons, New York. Revised by Frank S. Mathews, M. D., Assistant Professor of Clinical Surgery, College of Physicians and Surgeons, New York. Eighth Edition Thoroughly Revised. 12mo of 240 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$1.00 net.

These two books are just what their titles state. Very handy books for rapid review or study, invaluable for quick and ready reference, providing the essentials in a compact form.

United Fruit Company. Annual Report of the Medical Department for 1912, and 1913, by Dr. R. E. Swigart, 17 Battery Place, New York City.

A complete detailed account of the morbidity and mortality among the 65000 employes and dependants of this company in Central and South America, Cuba, and the West Indies. The Company uses the most modern and effective methods in sanitation and gives its employes and families the advantage of scientific service.

Saunders' Question Compend. Essentials of Nervous Diseases and Insanity. By John C. Shaw, M. D., Late Clinical Professor of Diseases of the Mind and Nervous System, Long Island College Hospital. Fifth edition, thoroughly revised, by Louis Casamajor, M. D., Chief of Clinic, New York Neurological Institute. 12mo of 187 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$1.00 net.

Epidemiologic Studies of Acute Anterior Poliomyelitis I. Poliomyelitis in Iowa, 1910. II. Poliomyelitis in Cincinnati, Ohio, 1911. III. Poliomyelitis in Buffalo and Batavia, N. Y., 1912, by Wade H. Frost, Government Printing Office, 1913. Hygienic Laboratory—Bulletin No. 90. October, 1913.

Men's Specialist Frauds: reprinted material (a book of 140 pages) by the Journal A. M. A, from the Chicago Tribune. It presents the Tribune exposures in a complete form. The price is 10 cents.

Sale of Bichloride Tablets: a discussion of the need or restriction of the sale and distribution of bichloride of mercury tablets, by Martin I. Wilbert. Reprint No. 151. Public Health Report.

OBITUARY.

Dr. S. S. Lytle died at his home in Iowa City Nov. 8, 1913, at the age of 72. A graduate of the State University College of Medicine in 1878, associated with the late Dr. J. C. Shrader until 1887, the demonstrator of anatomy in the medical college for fourteen years, became a member of the Iowa State Medical Society in 1883 and served as secretary for the Society during the years 1886, 1887 and 1888. He practiced continually in Iowa City for a period of thirty-five years.

In 1861, enlisted in the Union Army, serving for four and one-half years. Was shot through the left lung at Shiloh, while a member of Croker's Brigade in the Eleventh Iowa.

PERSONALS

Dr. H. R. Layton of Leon, who has been confined to his bed for two months with lobar pneumonia is now out of danger and able to sit up.

Dr. J. A. McKlveen, of Chariton, one of the oldest active Practitioners in the State, will spend the rest of the winter in California, with his family.

Dr. Henry Albert, Iowa City, gave a paper illustrated with lantern slides on the "Surgical Pathology of the Kidney", at a meeting of the Chicago Medical Society, Dec. 17th.

On January 27th, 1914, while in Sioux City, attending the meeting of the Committee on Arrangements, the building in which Treasurer W. B. Small, Waterloo, Iowa, had his offices was destroyed by fire and the doctor lost most of his office outfit, and records including many records of the State Medical Society.

Dr. M. P. Ravenel of the University of Wisconsin was appointed Chairman of the National Committee on Standard Methods for Bacterial Examination of Milk by the American Public Health Association.

Dr. Vernon Roberts was recently promoted to Chief Surgeon of the National Military Home, Milwaukee, Wisconsin, to fill the vacancy caused by the death of Major Chrysler, who was accidentally killed by a steam sterilizer which had recently been installed in the institution. Dr. Roberts received his promotion about November 1, 1913.

SOCIETY NOTES.

Plymouth County Medical Society.

The local members of the medical fraternity entertained the doctors and their wives from the surrounding towns in the county on Thursday, it being the final meeting of the Plymouth County Medical Society for the year.

The society is looking forward to a number of pleasant gatherings next year when it is hoped the bonds of fellowship will be further strengthened and the members will be more closely associated and act in unison both for the good of the public and themselves.

The final meeting of the year which took place on Thursday was more of a social function than anything else, although some business was transacted and officers for the ensuing year were chosen. The chief feature of the occasion was the dinner given at the Country Club, where hospitality reigned supreme. At prettily decorated and brilliantly lighted tables at which the guests were seated was served a fine dinner in five courses, following which the evening was spent in informal diversions

and a number of impromptu toasts were responded to. Among the guests from out of town were: Dr. and Mrs. J. H. Kerr and Dr. W. M. White, of Akron; Dr. and Mrs. J. H. Robbins, of Hinton; Dr. W. E. Wolcott, of Merrill; Dr. and Mrs. E. J. Lichty, of Kingsley; Dr. W. H. Heller and Dr. A. H. Jastram, of Remsen, also Dr. and Mrs. Brunner, of Westfield.

Plans for a number of meetings were discussed for next year and four quarterly business meetings will be arranged for and a committee was appointed to arrange programs.

Officers for the ensuing year were elected as follows: Dr. W. T. Shepard, president; Dr. R. H. Kerr, Akron, vice president; Dr. F. S. Clarke, treasurer and secretary. Dr. A. H. Jastram, of Remsen, was chosen delegate to the state medical meeting and Dr. J. H. Robbins, of Hinton, was appointed as alternate.

Dallas-Guthrie County Medical Society reports the following officers for 1914.

President: Dr. S. P. Free, Perry,
Vice Pres: Dr. C. I. Thomas, Guthrie Center,
Secretary-Treas: Dr. Allen Moorman, Redfield,
Delegate: Dr. F. W. Bush, Bagley,
Alternate: Dr. W. L. Thompson, Bayard.

The following resolutions were unanimously adopted by vote of this Society, October 16th, 1913.

Whereas, There is a county fund provided through taxation with which to provide care for the indigent poor; and,

Whereas, The medical profession as tax payers contribute their equitable share toward such a fund; and,

Whereas, The sick should have the privilege of selecting the physician of their choice, where this can be done without unduly burdening the taxpayer; therefore,

Resolved, That it is the sense of the Dallas-Guthrie County Medical Society that physicians in general and members of this society in particular, should decline to accept County work on competition bids, or for prices less than those usually demanded for like services rendered patrons in moderate circumstances; further,

Resolved, That the custom prevalent in some localities of rendering professional services upon contract at prices lower than those received for like services from patrons reasonably able to pay, is antagonistic to the spirit of professional fairness and therefore condemned by this society.

The Annual meeting of the **Hardin County Medical Society** was held in Eldora, Iowa, December 17, 1913. The following officers were elected:

President: Dr. Frank Seidenburg, Alden, Iowa.
Vice Pres: Dr. C. S. Trimble, Buckeye, Iowa.
Secretary: Dr. Wm. E. Marsh, Eldora, Ia.
Treasurer: Dr. J. W. Thornton, Ackley, Ia.
Delegate: Dr. J. A. W. Burgess, Iowa Falls, Iowa.
Alternate: Dr. Wm. E. Marsh, Eldora, Ia.

The following were elected to membership, Drs. J. E. Reed, Hubbard; W. H. Van Tiger, Eldora; & C. M. Wray, Iowa Falls.

The annual meeting of the **Polk County Medical Society** was held at the Savory Hotel December 23rd, 1913. After the annual banquet, at which about 150 members had places, Dr. J. F. Percy of Galesburg, Ill., read a paper entitled, "A New Point of View of Nephritis and its Treatment". After this paper, Dr. H. L. Foes, of Philadelphia, lectured,

with the aid of lantern slides, on his experiences of two years duration in establishing the Fair haven Hospital at Candle Alaska. The farthest North Hospital in the world.

The officers were elected as follows:

President: Dr. Granville A. Ryan, Des Moines, Ia.
 Vice Pres. Dr. J. C. Rockafellow, Des Moines, Ia.
 Secretary, Dr. Thos. F. Duhigg, Des Moines, Ia.
 Treasurer, Dr. E. B. Mountain, Des Moines, Ia.
 Censor for 3 years, Dr. D. W. Smouse, Des Moines, Ia.

The **Allamakee County Medical Society** held its Annual meeting in the County building at Waukon on Tuesday, November 25th, 1913, at 1:30 P. M.

Program:

The Scope of the practice of Medicine,
 Dr. P. H. Letourneau, Waukon, Ia.
 Poliomyelitis,
 Dr. C. W. Rominger, Waukon.

Election of officers for 1914:

President: Dr. J. C. Crawford, Waukon, Ia.
 Vice Pres: Dr. A. A. Schmidt, Postville, Ia.
 Secy-Treas: Dr. C. W. Rominger, Waukon, Ia.
 Delegate: Dr. P. H. Letourneau, Waukon, Ia.
 Alternate: Dr. O. O. Svebakken, Waukon, Ia.

At the annual meeting of the **Buchanan County Medical Society** held December 22nd, 1913, the following officers were elected for the ensuing year.

President: Dr. E. F. Agnew, Independence,
 Vice Pres. Dr. M. J. Joynt, Jesup.
 Secy-Treas. Dr. E. M. Sheehan, Independence.
 Censor, Dr. E. M. Sheehan, Independence.

The **Howard County Medical Society** reports the following officers for 1914.

President: Dr. C. L. Warren, Chester.
 Vice Pres. Dr. W. T. Daly, Cresco.
 Socy-Treas. Dr. W. C. Hess, Cresco.
 Delegate, Dr. Geo. A. Plummer, Cresco.
 Aiternate, Dr. J. W. Jinderlee, Cresco.

At the regular December meeting of the **Mahaska County Medical Society** held at Oskaloosa, Iowa, December 17, 1913, the following officers were elected.

President, Dr. M. Childress, Oskaloosa.
 Vice Pres. Dr. S. W. Hartwell, New Sharon.
 Secy-Treas. Dr. A. C. Spurgin, Oskaloosa.
 Delegate, Dr. J. G. Roberts, Oskaloosa.
 Alternate, Dr. J. G. Ryan, New Sharon.
 Censor, Dr. S. W. Clark, Oskaloosa.

Dr. H. M. Eisler of Oskaloosa was elected to membership.

The **Polk County Medical Society** on January 27th, 1914, had the following Program:

The Administration of Sanitary Laws Relating to Infectious Diseases,
 H. M. Bracken, M. D., St. Paul, Minn.

The Relation of Milk to Public Health, Dr. D. J. Glomset.

The **Poweshiek County Medical Society** reports the following officers for 1914.

President; Dr. P. E. Somers, Grinnell.
Vice Pres. Dr. L. F. Crain, Deep River.
Secy-Treas, Dr. C. E. Harris, Grinnell.
Censor, Dr. E. B. Williams, Montezuma.
Delegate, Dr. J. R. Lewis, Grinnell.
Alternate, Dr. C. E. Harris, Grinnell.

The **Dallas-Guthrie County Medical Society** had for its program on January 15th, 1914,

Applied Physiology of Respiration Dr. A. J. Ross, Perry.

Prevention of Tuberculosis Dr. J. A. Pringle, Bagley.

Diagnosis and Treatment in Early Tuberculosis Dr. J. H. Peck, Des Moines.

The **Jasper County Medical Society**, on December 16, 1913, had this Program.

Chronic Pharyngitis Dr. H. P. Engle,
Chronic Gastritis Dr. R. G. Anspach,
Chronic Cholecystitis Dr. Paul Koeper,
Chronic Entero-colitis Dr. H. W. Canfield.

Officers for 1914 were elected as follows:

President, Dr. Paul Koeper, Baxter,
Vice-Pres. Dr. S. E. Hinshaw, Newton,
Secy-Treas, Dr. H. P. Engle, Newton,
Delegate, Dr. H. P. Engle, Newton.

The **Marion County Medical Society** held its 30th Annual meeting on December 18th, 1913, with the following Program:

President's address, Dr. H. L. Bridgman,
Some Pathological Conditions of the Throat, Dr. W. F. Daniels,
A Little Surgery, Dr. H. F. Knebles.

Review of the transactions of the Marion County Medical Society since its organization in 1872, by the Secretary Dr. C. W. Cornell.

The officers elected for 1914 are

President, Dr. John M. Weiss, Knoxville,
Vice-Pres. Dr. C. F. Aschenbrenner, Pella,
Secy-Treas, Dr. C. W. Cornell, Knoxville.
Delegate, Dr. Ernest McClure, Bussey,
Alternate, Dr. C. W. Cornell, Knoxville.

The **Webster County Medical Society** on December 2nd, 1913, elected the following officers for 1914.

President, Dr. W. W. Bowen,
Vice-Pres. Dr. J. D. Lowery,
Secy-Treas. Dr. G. Baldwin Palmer,
Delegate, Dr. C. J. Saunders,

On January 20th, 1914, this Society had for its Program:

Over-Athleticism, Dr. J. W. Kime.

And on January 27th, the Program was

Function of the Ductless Glands, Dr. C. H. Churchill.

The **Montgomery County Medical Society** had its midwinter meeting December 31st, 1913, at Red Oak. There was a good attendance and a good program. Papers read and discussed were,

Serum and Vaccine Therapy, Dr. W. B. Lawrence,

How to have more successful County meetings, Dr. B. F. Gillmore.
Annual election of officers resulted as follows:

President, Dr. L. A. Thomas, Red Oak.
Vice-Pres. Dr. B. F. Gillmore, Red Oak.
Secy-Treas. Dr. Velura E. Powell, Red Oak.
Delegate, Dr. B. F. Gillmore, Red Oak.

The **Page County** Medical Society on December 18th, 1913, had the following Program, with an attendance of 16 physicians and their wives.

Reasons why Physicians do not Co-operate better, Dr. T. M. Throckmorton, Councilor 8th Congressional District, Chariton, Iowa.

Hemorrhage from the Genital Tract, Dr. Palmer Findley, Omaha.

Officers elected for 1914,

President, Dr. R. J. Matthews, Clarinda.
Vice-Pres. Dr. C. E. Kellogg, Shenandoah,
Secy-Treas, Dr. B. S. Barnes, Shenandoah,
Delegate, Dr. Thos. E. Powers, Clarinda.
Alternate, Dr. J. F. Aldrich, Shenandoah.

The **Ringgold County** Medical Society met at Mount Ayr, January 8, 1914. The following officers were elected for 1914.

President, Dr. J. H. Goad, Ellston,
Vice-Pres. Dr. O. L. Fullerton, Redding,
Secy-Treas. Dr. Samuel Bailey, Mount Ayr.
Delegate, Dr. J. H. Goad, Ellston.

After the business session the Society entertained the Doctors present at luncheon, following which Dr. C. S. James of Centerville, gave a lecture on "Diagnosis" and following this read a paper on "Intestinal Obstruction".

Various counties report officers for 1914 as follows:

Adams:

President, Dr. Frank P. Amdor, Carbon,
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THE SURGICAL TREATMENT OF UTERINE PROLAPSE*

GILBERT GEOFFREY COTTAM, M. D., Sioux Fall, S. D.

I assume that it is unnecessary to enter into any extended analysis of the causes, symptoms and pathology of uterine prolapse. These are sufficiently understood and agreed upon to be past the realm of debate and I therefore pass to the surgical treatment of what is a fairly common condition and yet is not one of the completely solved problems of surgery. I want to discuss it, if I may, from the standpoint of my own individual operative experience, and can do this best, perhaps, by detailing, with brief comments, the different procedures I have used in the twenty years in which I have been doing surgery.

The first method I employed was that of high amputation of the cervix with reconstruction of the perineum and further narrowing of the vagina by removal of an oval section from the anterior wall and transverse suture of the edges. This answered well in a certain proportion of the cases, but was open to the objection that too much depended upon the primary and ultimate success of the plastic work, and to the further objection that it required a separate and distinct operation to deal with any co-incident intra-abdominal pathology. Then came ventro-suspension and ventro-fixation, both inadequate measures, both from the standpoint of failing to relieve the prolapse and often adding other pathological conditions. I recall a recent case which was sent to me for secondary operation in which the prolapse had recurred after a ventro-suspension, and the constant tugging at the site of parietal attachment had so attenuated the scar as to produce a true ventricular hernia.

*Read before the Iowa State Medical Society, 1913.

Vaginal hysterectomy proved equally unsatisfactory at my hands, affording as it did inadequate support or anchorage for either the broad ligament, the bladder, or the rectum. It seemed to me the least rational of all the expedients I had tried.

I have abandoned all the procedures thus far mentioned. I gave them thorough trial before discarding them for at that time they were all we had, but having convinced myself of their inefficiency, and finding better methods as time went on, I was glad to let them go and perhaps would not even take time to mention them now were it not for the fact that every now and again I find some one using them. So much, then, for ancient history.

My practice for some few years past has been to make the type of operation conform to certain conditions present or absent in the particular case under consideration. If there is a suspicion of malignancy I do a total abdominal hysterectomy and either shorten up or overlap the broad ligament when bringing them together by suture so as to afford adequate support for the soft structures remaining. I find that this can be done without undue tension and yet sufficiently to hold up the bladder and rectum.

If there is no suspicion of malignancy and yet a question of co-existing disease in other viscera, so that an abdominal incision for the purpose of investigating and dealing with these other conditions seems advisable, I have found Murphy's method of abdominal bisection of the uterus and tacking each half to the aponeurosis of the abdominal wall on each side of the median line a very efficient procedure. It has all the benefits and none of the drawbacks of ventro-fixation. It deserves to be better known and more frequently used.

In a certain proportion of cases we have no reason to suspect either malignancy or concurrent disease of other abdominal organs. When such is the case I like to employ a modified form of the Mackenrodt-Dührssen vaginal fixation, which has all the advantages of safety and efficiency, without the post-operative annoyance of an abdominal operation.

So far I have made no allusion to the cases which require operation during the child-bearing period. While it is true that uterine prolapse is a disease of middle life and begins most frequently at about the menopause, it is also a fact that we occasionally find well-marked examples occurring much earlier. I recollect especially one case; that of a Scandinavian woman whose prolapse began shortly after her first parturition. Thereafter the only time she was comfortable was during pregnancy, which happened eight times, and what brought her to me for surgical relief was the unaccountably long period of time without pregnancy following her last confinement, leading her to fear that her husband might have reached his menopause and so fail to provide her with available means of uterine support.

In operating for prolapse during the child-bearing period it is perfectly justifiable, it seems to me, to offer the patient the opportunity of sterilization at the same time if the operation chosen (for instance, the modified Mackenrodt-Dührssen) does not of itself effect that purpose. If for any reason, however, the patient desires to retain her maternal prerogative, then the best operation I have found is the high Gilliam, for an uterus in anteversion cannot prolapse, and if pregnancy occurs it may go on uninterruptedly.

The operative management of uterine prolapse is not one of the spectacular things in surgery and occurring as it does more often among the hard working, and therefore poorer classes, it does not allow much leeway on commissions, nor in the very nature of things does it permit of those unaccountable newspaper write-ups which sometimes happen when we get away with a Cesarean section or a fractured spine, but I feel safe in saying that no single class of cases receive so much real benefit from a properly planned and executed surgical procedure as do these and none is so worthy of our earnest consideration.

Discussion.

Dr. B. G. Williams, Oskaloosa: I believe this subject is of great importance to us, largely because of the number of failures we see every day. It is an absolute fact that surgery of the pelvis and pelvic organs, as performed by the average man of today, is far behind, in progress of surgery of other parts of the abdominal cavity.

I believe if our text books had stopped calling these conditions rectocele and uterine prolapse and would have classified them as straight cases of vaginal hernia, the medical profession, as a rule, would have sooner realized the best way of handling them. There is but little difference between a prolapse of the uterus and hernia in any others in any other part of the body. The pelvic floor should be considered a part of the abdominal wall just the same as anterior wall, and, to go in above and expect to fix up these cases by doing work there, or by a poor piece of work, is bound to give us failure just as certain as if we should go into a post-operative hernia and undertake to poke back that prolapsed loop of bowel and attach it higher up and expect to thus cure our patient.

As a rule, if we would put less confidence in the Todd Gilliam and our Alexander, or use them only as secondary means of safety, and would go into the peritoneum and remove all scar tissue, then unite it in the same manner that we close a hernia of the abdominal wall in front, by tier suture of the fascia, levator ani muscle and skin with twenty-day catgut, and then, if we wish, as an extra precaution, do an external Alexander, Baldy, Watkins or bisect the uterus and fasten it in the abdominal wall, as does the doctor, choosing that method best suited to the case in hand, according to her age, size of uterus and general condition in which we find the pelvic organs, I believe we would get an absolutely good result in almost every case.

Dr. P. B. McLaughlin, Sioux City: There has always been a doubt in my mind of the justifiability of adopting or using any procedure that would in any way fix the fundus of the uterus. We have, I think, eight ligaments suspending the uterus, the anterior or utero-vesical, the posterior or utero-rectal or Douglas cul-de-sac, the two round ligaments, the two broad ligaments, and the two utero-sacral ligaments. I think it is always best to keep in mind that these are the natural supports and guy ropes of that body, and, gentlemen, there are none of these ligaments which fix or hold fast or suspend the fundus of the uterus. The utero-sacral ligament, as you know, passes upon the sides of the abdominal portion of the cervix of the uterus, passes back around each side of the cul-de-sac and around each side of the rectum, and attaches itself into the second and third sacral vertebra. I think this ligament, gentlemen,

has more to do with keeping the uterus from prolapsing than any of the other ligaments. The round ligament never supports the uterus, only during pregnancy, and the only function it has at that time is simply to lift the fundus of the uterus as it enlarges past the promontory of the sacral bone. It is nothing more than a continuation of the fibrous tissue of the uterine body, just simply a prolongation of fibrous tissue covered with peritoneum passing anteriorly upward, and outward through the internal abdominal ring into the inguinal canal, out of the external abdominal ring, and has its insertion supposedly at the upper part of the labium majora. When the uterus enlarges during pregnancy these ligaments have their slack taken up by their fibres that are spread out over the uterine attachment being put on a stretch, and consequently a shortening of the ligament takes place, and this lifts the fundus of the uterus out of the true pelvis. This ligament has a very small blood vessel passing through the center of it, as you so well know. The function of this blood vessel is to supply that ligament with nutrition. In doing your Alexander or your Todd-Gilliam operation, you must more or less constrict the blood vessel. What is the result? Actual atrophy takes place, and invariably in a very short time after your operation you have your uterus prolapsed as before.

I have a woman now under my observation that was operated on in Omaha. She had this internal Alexander operation done on her. She is now five months pregnant, and she has got a complete anteversion of the uterus with a constantly dilating fundus that is jamming her bladder down against the pubic bone, so that it is almost impossible for her to endue it. I look to see this woman abort or be compelled to undergo an operation to relieve her of the malposition of this uterus in its pregnant state.

Dr. Donald Macrae, Jr., Council Bluffs: I have enjoyed the paper very much, and I would like to compliment Dr. Cottam. The last speaker, however, while what he says perhaps is true, he doesn't seem to give the patient any particular relief. He has the uterus hanging out between her legs—

Dr. McLaughlin: You didn't give me time to get to that, doctor.

Dr. Macrae: I know it.

Dr. McLaughlin: I was coming to that.

Dr. Macrae: I didn't hear that part of it. We have a woman with her uterus hanging out, and her bladder and rectum—a cystocele and a rectocele. I don't know a more disagreeable condition for a poor woman to have. As the doctor has aptly said, it is not a grand stand operation, and all that sort of thing.

I don't know of an operation that has been successful until recent years, absolutely successful. They have practically all been failures. There is no operation devised that I know of up till the present time, till the last two or three years at least, that has been of any consequence at all. Occasionally one would hang up a while, but they would nearly all come back again, come down, and I don't know of a single operation at the present time that you can guarantee any assurance of positive cure, or permanent cure, unless you take out a portion of the uterus. The so-called Todd-Gilliam operation, or high Gilliam operation, I think, as the doctor says, is the only thing to do with a woman who insists upon continuing the child bearing act. That cannot be guaranteed to do anything. That uterus may come down just the same. I don't believe it will hold up.

The only positive operation that we have is the operation that the doctor has spoken of, I think, bi-section of the uterus. It is the only one. And I defy any man to show me any other operation that is reasonable and justifiable, and that is safe and sane, and that will hold up that uterus, except that particular one.

Doctor McLaughlin, you can talk about ligaments and ligaments. These uterine ligaments are all imagination, anterior posterior and side ligaments. They are nothing more than the peritoneum. You can call the whole thing ligament. There is nothing to this ligament business at all. You can't talk about this being a hernia. You have got to hold that thing up. You have got to hold the bladder and the rectum up with it, and the only way to do that successfully is to cut out the center of that uterus and take the sides up through the rectus muscles and bring it through under the skin, and it can't get away.

We have done a great many of these operations, and I have never

seen a single one a failure. I read a paper a short time ago up at Carroll, and I was called down because of imaginary dangers of bowel obstruction. It won't do it. You bring the cervix up against the peritoneum, and you can suture it there without any question.

In addition, gentlemen, fix the perineum. If necessary take a hunk out of the vaginal cervix, etc. I believe that is absolutely essential. That is holding the uterus. There is a certain amount of cystocele and a certain amount of rectocele and everything else. It will be very much more serviceable to the patient to have these other things done as well.

I have been very much interested in this operation, and in talking to doctors have been surprised to find how few know anything about it. The usual operation is to take the fundus and stitch it into the peritoneum, and shorten the round ligaments, for a prolapsed uterus. This operation has not been known until the last two or three years to any extent.

As for vaginal hysterectomy, don't do it. It is absolutely inefficient. You are not removing a hernia when you take a uterus out. You are not doing a thing to the patient except to make her worse.

As I say, let's forget these ligaments, because this ligament business is a joke to me. You can search for them and you can find two or three little shreds shooting off here and there, but I defy anybody to show me any proper ligaments holding that uterus up when it is hanging down. You have to bring that up and hold the whole thing, and the Mackenrodt and the operation the doctor has advised is the only operation that is justifiable.

Dr. W. L. Downing, Moulton: I want to tell Dr. Macrae of one case I have in mind. A woman 44 years old, weighing 190 pounds, had a prolapsed uterus two-thirds of the way down to her knees. The uterus was easily the size of a new born baby's head. She was a bad asthmatic, and came under my care. With the assistance of Dr. Spilman of Ottumwa we operated on her, lifting the uterus up, operated on her for a rectocele and cystocele in the usual manner, and fixed up the perineum. It took us two hours and a half. I said, "There is just one more thing we need to do in order to save my reputation at home. We must do a high Todd-Gilliam." The doctor said, "No, I think she will be all right." I said, "That the uterus will be down in six months, I am sure." In fifteen minutes we did our high Todd-Gilliam. It has been five years now. You ought to see that woman. She quit menstruating in two years. She has been well ever since, and I am sure she will go right along first class.

Dr. Cottam: Mr. Chairman, there is just this to say about the ligaments—that is, for all practical purposes they are not there. We speak of shortening the round ligaments, and we speak about picking them up in the Gilliam operation, but I have long ago come to look upon the round ligament as simply an anatomical landmark. It means nothing from a supportive standpoint to the uterus. It is convenient to pick up the round ligament and pull it through an opening in the abdominal wall and fix it there, in doing the Gilliam operation. But after looking down through the abdominal incision many and many a time before closing it after doing that, I have seen, as everybody else has seen who has done that operation, that it is not the round ligament at all that is holding up that uterus. It is not. It is the associated structures, the peritoneum and the fascia. The round ligament is nothing but simply a guide post, an anatomical landmark. I don't think we need to pay any attention at all to any of these ligaments in our work on the uterus, and the sooner we forget about them except as bumps on the horizon the better it is for the patient.

The gentlemen who spoke about building up the perineum and treating these cases as hernias and all that kind of thing only went a very short part of the way. Those things are all very well. It is necessary to do that, to build up the perineum and do things of that kind in cases where we don't do such operations as the bi-section operation, but I contend, and in this I must differ from my friend Dr. Macrae, if you do a bisection operation you don't need to bother with the perineum at all because the uterus can't come down. Why not leave the perineum alone? Its function is gone as a supportive medium. It is not there any longer for that purpose, but it is gone, and the uterus won't come down. What is the use of dealing with it at all? I simply leave it alone and I have had no occasion to regret it.

I am very glad to have had this discussion of this paper, and I thank those who have participated.

GASTROCOLPTOSIS*

An etiologic factor in its production.

Treatment.

DONALD MACRAE, Jr., M. D., Council Bluffs, Ia.

Among the surgical problems at present under discussion, much interest attaches to the effect upon the normal physiologic functions of the body, produced by malpositions of the various abdominal viscera.

The primary etiologic factors producing these abnormalities, as well as the treatment, are of greater importance, and should engage the most careful consideration of the profession.

No class of cases is more disagreeable to the general practitioner, no condition more difficult to overcome by the physician or surgeon. These poor sufferers are only too often placed in the scrap pile of chronic neurasthenics, where they may be slowly devoured by the vultures of quackdom.

Essentially there are two theories advanced for the cause of ptosis; the one, Glenard's theory of a nutritive disease due to liver changes which involves atrophy of the intestines, etc., which leads to gastroploses, hepatoploses, enteroploses, etc. This theory is now in disfavor, and Stiller's hypothesis, that a universal asthenia, laxity of the entire structure of the body, congenital weakness, etc., are at the bottom of the trouble, that ptosis and the constipation are due to atony of the tissues; the pains and nervous symptoms to neurasthenia; the whole simply being a manifestation of degeneration, and that surgical therapy for enteroptosis is senseless (Rovsing A. M. A. Vol. LIX No. 20.) Professor Rovsing of the University of Denmark in his address at the nineteen hundred twelve meeting of the American Medical Association takes issue with the above authority and says—"I think however, that one is justified in expressing a certain wonder that Stiller's hypothesis is accepted unreservedly and without criticism by the majority of doctors the world over. Because there is one fact, which, even when Stiller's theory is regarded quite superficially, seems to deliver a coup de grace." "It is the circumstance that enteroptosis is so rare with men and so very frequent with women, that it must almost be considered a feminine disease par excellence." "Nor is there any lack of thin badly built neurasthenic men,—but it is seldom that these suffer from constipation and dyspeptic symptoms which characterize the ptosis patients." "In my opinion" says Rovsing, "very simple explanation is found in two circumstances peculiar to women—1, their misuse of corsets and laces; and, 2, the changes which pregnancy and childbirth involve in the abdominal pressure." "Here

*Read before the Iowa State Medical Society, 1913.

we have the two facts which explain enteroptosis as a feminine disease *par excellence*."

The writer cannot agree entirely with either of the authorities quoted above. That ptosis is always due to a congenital, etc. (Stillers), or to "child bearing and tight lacing" (Rovsing), is a mistake. That these influences may be a predisposing factor, I grant. The basic factors responsible for ptosis may be few or many in a given case. But colonic retention of heavy hardened feces, is the direct mechanical factor capable of completing the wreck.

Gastrocolptosis sufficiently marked to produce symptoms, must, in the writer's opinion, present two conditions, one dependent upon the other—namely—1, colonic retention of heavy hardened feces, 2—symptoms of poisoning (neurasthnia, etc.) from lack of elimination. Ptosis of the stomach and colon, is usually accompanied by a malposition of other organs, such as the liver, kidneys, etc. Active children are seldom affected. Men are not exempt, but by far the larger majority are found in women. Women who have never born children are equally as susceptible as those who have, in my experience. Tight lacing may aid the process in chronically constipated girls. But that this is a minor factor is evidenced by the fact that many of these girls have never worn corsets. The corset in general use for the past few years, is of the straight front variety, acting more as an abdominal support upwards, than the contrary. That child bearing aids in the development of gastrocolptosis, there can be no question. But there is something back of this,—and that thing is chronic colonic fecal retention. Women are more in the majority, because the majority of women are "constipated." Young women are careless in responding to rectal stimuli. Later, the insulted lower bowel refuses to notify the proper brain cells. What must be the result? The moment the transverse colon begins to sag, the stomach is attacked, the hepatic and splenic attachments of the large gut are put on a stretch, producing a kink at each of these points. The kinks in turn, act as obstructions to the already sluggish bowel. Absorption of poisons are more marked. The patient now has symptoms of anything and everything, and becomes a chronic invalid, which further increases the retention of feces. Now the other organs begin to give way, and we have a complete picture of general visceral ptosis.

The above is an attempt to describe the classic gastrocolptosis with its sequellae. There are, however, several other factors which, in the majority of cases, in my experience, play an important rôle in the production of this most distressing malady, namely, adhesions, strictures of the colon, Jackson's membrane, etc. The most common of these, and by far the most important, is the latter. The origin of this tissue, first described by our distinguished guest from Kansas City, is still a question. Concerning this membrane much has been written of late. And from the literature at my disposal,

I am impressed by two theories, namely, 1, inflammatory and 2, non-inflammatory. The first is due to micro-organisms passing through the bowel coats, initiating a chronic inflammation which results in the formation of this cobweb membrane, which is described under the title, membranous pericolitis. The other theory embraces the various congenitally defective migratory and rotary movements of the colon. Mayo (Surg. Gynec. & Obs. March 1911) advances the theory, that the cecum descends behind the posterior parietal peritoneum, instead of in front. Eastman's (Surg. Gynec. & Obs. April 1913) article on "The fetal peritoneal folds of Jonnesco, Treves and Reid, and their probable relationship to Jackson's membrane and Lane's kink" is most convincing. Eastman, after a large number of autopsies, says, "Whatever the origin of these folds in the fetus, there will be no doubt in the mind of anyone who will examine the region of the cecum, in a few fetuses, that they exist before birth, and are readily demonstrated in one form or other, in approximately 20 per cent of fetuses, after the sixth month. The fold of Treves was present in a large percentage of cases."

Connell, also, (Surg. Gynec. & Obs, April 1913) under a subtitle of "Anomalies of Migration and Rotation of the Colon" adds to Eastman's article, almost conclusive proof, that inflammation per se, is not the prime factor in the production of these interesting membranes. The limited time devoted to this paper, will not permit of a more thorough discussion on this phase of obstruction, other than an attempt to point out the very obvious effect that these bands or membranes must necessarily have upon the drainage of the colon. This conceded, one can readily understand the relationship of Jackson's membrane to colonic retention and ptosis.

Method of diagnosis and treatment.—Early recognition of gastrocolptosis is all-important to insure permanent relief. Mistakes are seldom justifiable, and yet too often made. Many of these cases have been subjected to the knife. Nephropexy, appendectomies, and even gastro-enterostomies, are constantly being performed upon this class of patients, without the slightest benefit being derived. On the contrary the symptoms are frequently aggravated, and the condition of the wretched patient made more miserable. After taking the history, which is all-important, these patients should be placed under control for several days, preferably in a hospital, where every method at the surgeons disposal should be employed, to determine the real conditions. In my opinion, no one adjunct is of greater importance, as an aid in diagnosis, than the bismuth meal, followed by the x-ray. I fully realize that this agent may be misread, or actually abused, but in the hands of conscientious men, I have no doubt of its great value. Practically all of the early cases, not associated with pericolitis, membranes, or bands, belong to the internest. Rest in bed, for a long period of time, with

foot elevated, proper diet, thorough evacuation of colon, etc. Massage may be of benefit. After this course, the patient should be taught the dangers of constipation. In addition a suitable ptosis belt should be constantly worn. In cases more pronounced, with or without bands or mechanical obstruction, the right rectus incision is indicated, and the whole belly explored. No unnecessary surgery should be done. Removal of the appendix, and letting down of the hepatic and splenic attachments of the colon, will symptomatically relieve a large number of these patients. When Jackson's membrane is present this should be snipped, or removed. In extremely aggravated cases, by a side tracking, a colocolostomy, colosigmoidostomy or iliocolostomy may be justifiable. I enjoy reading the classic papers of Coffey, (*Surg. Gynec. & Obs.* Oct. 1912) Lane, Rovsing, and other radical surgeons, who believe in excising the colon, or tacking up everything to the diaphragm, or belly wall. But I cannot agree with them in any particular. Wilms' "cecum mobile" is a joke to me. And I heartily agree with Bevan (*A. M. A.* 1912) in his paper entitled, "Dilatation of the large bowel" when he says, "Let us therefore, in the beginning of this discussion, wipe off the slate of legitimate surgical procedures, Lane's operation for chronic constipation, and Wilms' anchoring of a movable cecum."

And finally, these patients, after operation, must be instructed to watch carefully their diet, and above all, to keep their colons clear, for the remainder of their lives.

In closing I wish to thank Dr. E. A. Merritt of Council Bluffs for the valuable and able assistance he has given the writer, not alone with his radiographic, but other internal work as well.

Discussion.

Dr. Wm. Jepson, Sioux City: This is indeed a most important topic, because I am sure that there is no one within the hearing of my voice, as there has not been within the hearing of that of Dr. Macrae, who has not from time to time, whether he be in the general practice of doing specialties of surgery, but what has had these poor cases coming to him for advice. And as the doctor has aptly said, a large per cent of them ultimately land in the scrap heap, as if they had been blackballed in the scheme of creation, all as a result of efforts at bettering them.

The doctor has called our attention to one point in connection with this class of cases I think we should not overlook, namely, that they are practically always women. And when we stop to think of woman and her normal sphere in life, we recognize that as being predominantly an artificial one. Woman is the most artificial creature on the face of the earth. I don't mean that she was originally such a creature, but she is kept in it. She is kept in a prison from the time she is born until the time she dies, hedged in by the conventionalities of society, just because of the fact she has got to make here mammary glands stand out as well as her buttocks, through the medium of constriction. I am sure there are none here that will take offense at that. That is evidently the intent of the originator of that plan, in the present day constriction of the intra-abdominal viscera. If the organs can't go up they will go down, because there has got to be room somewhere. They have now introduced another plan supposed to obviate that, but which is more damnable than the other one, namely, the straight corset. Why? Because it takes and puts a tight skeleton on her. If the Creator had intended that she should have

a tight wall in front so that the intra-abdominal viscera should not move, I am quite sure she would have been thus constructed.

But it was intended that the intra-abdominal viscera should have exercise, and exercise they must have if they are going to be well. So, by reason of her method of dress and in order that she may conform to the essentials of society, which means that she must sit about in a chair and not perform the duties that ordinarily should come to the rest of humanity, she comes to suffer from malnutrition; she becomes the individual that the Englishman so well described. He said, "What is woman? She is an artificially prepared object with a pain in her back and a constipated bowel." Then following the constipation thus originating from lack of appetite and lack of exercise, we get, as the doctor has aptly described here, that condition of intoxication. And that brings about more trouble, more ptosis, and then we have a vicious circulation until the poor woman becomes the wreck so aptly described.

Now we have heard a lot about Jackson's membrane, Lane's kink and Jannesco's fold, we have got enough stuff in the abdomen already.

I think the less you hunt after these membranes the better. Let's go to work and emancipate ourselves from the conception that is dealing with poor woman, we can only do so with pill and powder, speculum and pessary, and operative attacks. Let's try to teach that woman what her station in life is and see that she assumes it, and if she does and gets out doors and romps around with her brothers or her husband, there probably will not be much occasion for much talk about enteroptosis.

Dr. J. F. Herrick, Ottumwa: Some years ago I read an article, not on this subject, but on a subject that I believe from the description throws light on this subject. The theory was proposed that atmospheric pressure was responsible for all these conditions. Now I have fixed in my mind the situation. We know the average man is an abdominal breather, and the average woman is an upper chest breather. The result is she never moves her diaphragm. The result is you have got a stationary condition in the abdomen, nothing to elevate or move the abdominal contents. Now I believe that if we were to take these women and take their corsets off altogether, as Dr. Jepson would do, and teach them to expand the chest and breathe with the chest expanded, you can't have a sagging abdomen. Atmospheric pressure of fifteen pounds to the inch will drive those things up, and I am satisfied that a great number of those cases can be cured without either pills or doping.

Dr. Macrae: I appreciate Dr. Jepson's discussion very much indeed, and think he is perfectly correct, except the fact that he is belittling the Jackson membrane. Now I don't care whether you call it Jackson's membrane or what you call it. There are, as I mentioned in my paper, a dozen names attached to this particular thing. But you will see by some of these pictures passed around here a double-barrelled condition of the colon and ascending colon passing up to the hepatic flexure and passing forwards almost to the cecum, thoroughly agglutinated from one end to the other, and then passing over here to the splenic flexure and down. One of these cases here, a man by the way, 53 years of age, had been looked upon as a neurasthenic all his life, taking this, that and the other thing. Pictures were taken. These conditions as we thought demonstrated the evidence of membrane, and an operation was made in which the membrane was removed, and the man is well today. It was not the psychic influence of the operation in that particular case. It was the operation plus the instructions to keep the bowel open afterwards. There is no question about that in my mind.

On the contrary, how many cases do we see where the appendix is removed, where the appendix is simply a minor factor in the production of the symptoms. You find he has a little soreness here. Somebody makes a small incision, removes the appendix, and the patient is not a bit better. It is not the psychic influence there. Cut into those cases afterwards and find a condition such as we have demonstrated here, remove the membrane and they get well. There is no question about it.

I think the condition is congenital. The reason why it comes on late in life, children are active and they can throw these waste products off. When they get older and lead a more sedentary life, the Jackson membrane begins to cause symptoms. Women are more apt to than men, as has been aptly stated by Dr. Jepson, on account of their environments, their habits of dress, their false modesty in going out to relieve their bowels, and so on. It is well known that women go three or four days frequently without a bowel movement, and when they have one it

just relieves the rectum; it doesn't relieve the colon at all. It is always packed up there. No question about that. You all know that as well as I do.

It is not some deep, wonderful process that produces this. It is simply retention of fecal matter plus the membrane we speak of here which is the prime factor in the production of ptosis. Connell and Eastman have shown almost conclusively by demonstration in newly born babies, and in fetuses, that this membrane is actually present at that time.

It is well known that the colon will roll twice over in certain cases. Instead of seeking its normal position such as it should do, it will rotate too much, perhaps half way over again, or completely over. The result is not only its one fold, but as it rolls over again, it brings another fold with it. This has been found in fetuses, but the result was not seen until later life; not until that child has stopped playing around and doing the things that naturally a child will do, do these symptoms manifest themselves.

This is not a discussion on the Jackson membrane, but I believe the Jackson membrane and membranes of that class have a great effect upon the production of constipation. There is no question about that. Absolutely none. Of course Dr. Jepson in speaking of corsets and what they are doing nowadays is much more capable of telling you about corsets than I am, because I really don't know much about them.

SOME ASSOCIATED ABDOMINAL TROUBLES*

W. F. CRAM, M. D., Sheldon.

It has been estimated that seventy per cent of stomach carcinomas give a history of previous well marked ulcer. I believe this percentage will be increased as the symptoms of gastric ulcer become better understood and the conditions recognized. Cancer is almost the only disease which is steadily increasing among the civilized races. It is possible that this increase of cancer is more apparent than real, due to the fact of more reliable statistics, rather than to actual increase. That cancer is cured by surgical means and by surgery only when properly treated in its earliest stages is a well established fact. The conclusions from the fact are that to obtain more cures the existence of cancer must be recognized at the very earliest possible time. Not only must the cancer be recognized early, but the conditions which are the occasion of cancer should be understood and the laity taught in every way possible to know what the early symptoms are and the importance of early treatment. It would be extremely interesting to discover the parasitical origin of cancer, if such there be, but it is not necessary to know this in order to deal with the condition intelligently. What then is cancer? Pileher defines cancer as follows: "It is in the lawless proliferation of pre-existing epithelial cells in luxuriant, irregularly arranged masses that invade underlying and surrounding tissues permeating and destroying them, and finally themselves attaining a mass which can no longer be nourished by an accessible blood supply, and then falls into central decay; while at the periphery the process still goes on, that cancer consists." It must then be considered that a prolonged irritation of groups of epithelial cells

*Read before the Iowa State Medical Society, 1913.

are if not the cause, at least the condition favoring cancer. Cell proliferation becomes cancerous only when there is infiltration. In this connection it does not so much concern us as to whether a gastric ulcer is a result of an infection of the lymphoid spaces through the blood stream or lymphatics, as it does that an ulcer exists in a location where it is subjected to frequently recurring irritation in an aggravated form both chemical and mechanical. It gives an ideal environment for the occasion of a cancer. It naturally follows that if the irritation is removed the cancer is avoided. It is important that ulcer should be treated by medical means early and healed, if possible. Even when healed, a functionless scar is left of connective tissue, of lowered vitality favoring malignant degeneration. If the ulcer is not promptly healed so that all symptoms disappear, it should be early treated surgically. It is my opinion that all cases of gastric or duodenal ulcer subjected to surgery should be excised widely and the part coapted as nicely as possible in order to secure as small an amount of scar tissue as possible. I venture that gastro-enterostomy will in the future be less often done than it is now, or has been in the past for the cure of ulcer.

There are certainly individual cases where it is impracticable for local reasons that an ulcer be excised, but excision or resection should be the rule for the reason that the macroscopical appearance of an indurated ulcer is not conclusive of its nature, it is easy enough to secure a specimen for immediate examination for determining the nature of a suspicious breast growth, but not so here.

The importance of chronic irritation as a condition leading to cancer has been underestimated. When its importance as a pre-cancerous condition is fully appreciated and proper means of removal are adopted, then the mortality from cancer will be reduced by prevention.

Zenker, states that in 85 per cent of cancer of the gall bladder he found gall stones. A sufficiently large percentage to indicate a probable relation between the irritation due to gall stones and cancer. To cure cancer of the gall bladder it is obvious that the cure consists of prevention by removing the gall stones before prolonged irritation has resulted in infiltration of the tissues. It is estimated that one in thirteen have gall stones. Bevan found gall stones upon post mortem where death was due to all causes in one in sixteen. Cholecystitis with more or less stagnation exists in one in ten. It is believed that gall bladder infection always preceeds the formation of gall stones. However, Johns Hopkins Bulletin concludes that "the typhoid bacillus aggravates cholecystitis in the presence of gall stones, but that the typhoid bacillus is productive of gall stones is by no means certain."

According to Cushing infection of the bile occurs in 50 per cent of fatal typhoid cases and this infection is apt under certain conditions to cause cholelithiasis. The typhoid bacillus is only one

of many bacteria found in the gall bladder, and it does not prove the absence of other infections, but rather supports the contention. Where there is stagnation of the bile, there is a *locus minoris resistentiae*, favoring bacterial invasion. It is not necessary that the route of the invasion should be up through the ducts, but may be downward through the liver itself. Milne states: "We used to think infection of the kidney pelves occurred by way of the ureter, but have now given that up. We know, on the contrary, that the kidney can excrete organisms from the circulation without any apparent damage to the organ. We know that tuberculosis in the urine do not prove tuberculosis of the genito-urinary tract. We know that the *bacillus coli* is found in the urine of one in twenty women, and the kidneys suffer no harm."

Infection does not play so great a part in renal calculi as it does in gall bladder calculi. Infection in the region of the appendix plays a very important part in the secondary invasion of the gall bladder. A recent experience of a distinguished surgeon illustrates this point. He was operated for acute appendicitis and within a few days the gall bladder was opened and drained presumably for acute cholecystitis. Murphy makes the following statements: "In streptococcic infection of the appendix, there is often a leucocyte count of from 70,000 to 80,000. The streptococci run through the lymph spaces of the appendix like water through a sieve." This immense leucocytosis indicates the cyclonic nature of the streptococcic infection of the appendix. Streptococcic infection of the gall bladder runs a rapid and violent course terminating in early cystic gangrene and death, if unrelieved. In the ordinary case of appendicitis, due to staphylococcic infection, the course is much milder, there may be pus and decided local tenderness, but less tension than where due to streptococci or pneumococci. Infection of this region due to the colon bacillus are usually of a more subacute nature, and pus in such a case is offensive and any of these are very apt to invade the gall bladder secondarily through Jackson's vein or through the lymph channels or the general circulation. Many cases occur closely allied to appendicitis where the clinical history and symptomatology is so closely related that it requires the nicest discrimination to differentiate. There must be an elevation of temperature some time during the early course of appendicitis. And where there is temperature along during the course of the disease it indicates a continued absorption of toxic products. In the absence of elevated temperature in connection with severe pain and tenderness in this region, it is almost certain that the trouble is not in the appendix, but it must be looked for elsewhere. An attack of renal colic due to a pelvic calculus, or a small calculus descending or lodged in the ureter will so closely resemble appendicitis that an error in diagnosis could easily be made. The absence of temperature and the negative fist percussion of Murphy, will be valuable guides. Later,

blood cells found in the urine will finally settle the diagnosis. The case of a young married woman came to my office during the preparation of this paper, with a history of pain in the appendix region of a dull, dragging kind, radiating down the thigh. Appendicitis had been diagnosed and operation advised. Pain had continued for two years, more or less, severe and paroxysmal, and followed the birth of a child. Tenderness was not always in the same place, but moved up; there had never been an elevation of the temperature, so far as the patient was able to determine. Upon examination, a mass was felt which was easily displaced up behind the ribs. The tenderness invariably was in the enlargement. With the mass crowded down, the tenderness corresponded precisely with McBurney's point. Pushed up, there was no tenderness at this point, but there was a tenderness in the kidney region. When the mass was displaced downward, no kidney could be felt where the kidney should be. A diagnosis of floating tender kidney was made. Another class of cases giving a very similar clinical history, and where the findings upon examination are closely related, but where the results are frequently disastrous, are those of an appendicitis in a displaced appendix. There is a comparatively high temperature, and leucocytosis, with pain and tenderness extending high up under the ribs. Every indication there of a present infection. Upon examination the caput coli is found pulled by adhesions upward and outward. The distal end of the appendix is away up under the liver. A streptococcic infection. Your patient may already have a jaundiced tinge of the conjunctiva. The appendix is removed, drainage introduced, but your patient becomes markedly icteric, temperature goes up and the patient becomes delirious. Septic hepatitis develops and your patient dies. The patient has stated that the pain was in the lumbar region, and if there were recurring attacks of pain, it was always in this location. And too, he always had temperature. It is of the greatest importance that this should not be diagnosed and treated as kidney colic.

Mosher has found that nephritis was of all diseases the one most frequently associated with gall stones. Babcock and others have pointed out that quite a large per cent of cholecystitis and gall bladder infection developed cardiac symptoms. The explanation of the reason why some cases of cholecystitis should develop heart symptoms, and why all cases should not, is, as shown experimentally, that certain strains of streptococci injected into the blood of a dog will invariably produce endocarditis, and certain other strains myocarditis, phlebitis, arthritis, and so on. The relation between tonsillitis and so-called rheumatism is often enough seen. So here the irritation effects of definite strains of bacteria, or their toxins, circulating in the blood, cause an endocardial irritation. The depressing effect of bile and its constituents upon the myocardium is observed both experimentally and clinically, and

have to do with the heart condition. Also where nephritis occurs in this association, it can clearly be through the blood stream, and secondary to the myocardium complication. Phlebitis, especially of the veins of the leg, following often very mild infection, in precisely the same way as endocarditis or myocarditis. The healthy heart muscle may endure and quickly recover from a disturbance of this sort, while on the other hand, heart muscles undergoing structural changes from age or disease, may easily yield to this added invasion. The points I wish to make in this connection are that gall stones are always due to infection, and that gall bladder diseases is more frequent than is generally recognized. Its effect upon the heart circulatory system and kidneys is more pronounced than has been suspected.

The following statement by Babcock, I believe, contains an important truth and one well worth remembering. He says: "I am coming to believe that if any patient complaining of stomach trouble does not on careful investigation show gastropnoia, or dilatation secondary to some structural alteration, as in cancer, or does not show hyperchlorhydria, that the gall bladder should be regarded with suspicion. I believe that the stomach does not produce symptoms unless it is structurally changed, or is disturbed by some condition out side of the stomach." It follows that the gall bladder is an organ of considerable importance. Its diseases are more often overlooked than any other abdominal trouble, its symptomatology is not perhaps as clear and distinct as that of some other diseases, but its treatment by drainage is of the utmost importance. If these statements as made are facts, then the early recognition of gall bladder disease, and the appropriate treatment of cholecystitis or gall stones, when done before secondary degenerations have occurred, should have not more than an extremely small mortality, but if delayed until any of these secondary degenerations occur, such as endocarditis, or myocarditis, or vascular disturbances, extending to the pancreas or kidneys, then there is little hope of valuable salvage out of the wreck. "The risk is not in surgery, but in delayed surgery."

In looking back over thirty years of gall bladder literature, as it has developed from year to year, the matter of error in diagnosis and treatment is well expressed by the beautifully worded confession in the Episcopal Liturgy: "We have done those things which we ought not to have done, and we have undone those things which we ought to have done, and there is no health in us."

Discussion

Dr. G. G. Cottam, Sioux Falls: It gives me great pleasure to be with you again today and have the privilege which has been extended to me. I should like very much to be able to say something valuable about this paper. I was unfortunate in getting in late and only heard part of it. I heard enough, however, to know that the author has presented matters we can do well to ponder over. The subject covered by the doctor is

very important to all of us, because, I think, we get in the habit, as time goes on, of getting our range of vision narrowed, as it were, whereas, we ought to try and broaden it with respect to the clinical pathology of the abdomen, or any part of the body. We often have heard, and do yet sometimes hear some one say that we are going to do such and such an operation in the abdomen. I do not know how a man is going to be able to tell in advance just what he is going to do. I must be more ignorant than the average person, because I am never able to tell just what I will do, and it makes no difference that I have been doing this work for twenty years. The fact of the matter is there are so many things associated in clinical pathology, that we must always keep our mind and eyes open, and when symptoms point to one thing, we must not take it for granted that that is all.

I think one of the most interesting and instructive papers I ever read was that published in the *Lancet* last year by Moynihan, who made the sweeping statement that he almost never operated on a case of duodenal ulcer without the appendix having been affected, and that the appendix produced more secondary disturbances than any other organ.

THE DOCTOR'S PARTNER*

MRS. O. L. CHAFFEE, Waverly.

At first I hesitated to usurp the honor that has usually been accorded our toastmaster by peculiar privilege, the honor of toasting the ladies, but we women long ago realized that gallantry and chivalry are far removed from justice and a fair recognition of our rights, so I gladly seize the opportunity this afternoon to present to you the case of the doctor's partner and to ask you to consider it in all fairness.

Do you take this man to be your lawfully wedded husband, to comfort him in sickness and in health, to love, honor and obey him, to be his foreign representative, his domestic economist, his social secretary, his press-agent, his trained nurse, his book-keeper, his bill-collector, his office-girl, his telephone-operator and his short-order cook? Do you solemnly promise to be all these things, without money and without price, in the holy estate of matrimony so long as you both shall live?

Answer, doctors' partners all, "I do".

This is the vow that every doctor's wife takes when she enters into this partnership of equal opportunity, equal responsibility, equal liability and partial dividend. She has achieved wonderful versatility by having all these duties thrust upon her.

How often she has had to resort to subterfuge, if not actual falsehood in order to save her partner from having to perform some unpleasant duty, how many times she has stood lying at the telephone while he was lying in bed, how many times she has acted as a buffer between him and some importunate patient or bill-collector and how many times she has managed that he may be undisturbed while "sleep knits up the ravelled sleeve of care" after a hard night's work! How she has helped him with her good advice, her gentle tact, her wise counsel and her heaven-sent inspiration! How

*Read before the Bradford-Ford Banquet, Waverly, Iowa, Jan. 15, 1914.

through diplomatic social intercourse she has won to his standard numerous members of the feminine sex who employ him not because of his ability but because he has such a nice wife!

An Irishman out of work stood looking in at the window of a London book-store when the following sign met his eye,

Dicken's Works

All this week for

Only \$4.00.

In amazement he read it again,

Dicken's Works

All this week for

Only \$4.00.

"The dirty scab", Pat exclaimed.

And so we doctors' wives are dirty scabs in the union of office-boys and office-girls for we render efficient service with no wage because our hearts and our lives are in it.

Really, I wonder how any of you doctors dare to remain bachelors when you consider what a single-handed fight you wage against your business rival who has a partner-wife at home. You are bound by the peculiar ethics of your profession to refrain from advertising but your wife is not. In what an artless manner, (artless, at least to the lay-auditor, too apparent, alas!, to her sister-partner, who longs for a similar opportunity), she will apologize for her tardy appearance at some social gathering because of the lateness of the meal incident to her husband's terrible rush of work.

A poor struggling author had tired of being the butt of the wit and abuse of a more successful brother and finally he said, "After all, we row in the same boat." "Yes", came the reply, "but not with the same skulls". And so in a boat-race or any other race in life, two skulls are better than one.

But perhaps you fear to stake your happiness on one life only instead of two or three, still as the bargain is more complete and explicit on your side it is more so on the other, also, and you know that so long as Death with-holds his sickle you have a friend at court. A friend with whom to share the anxieties and vexations of the day, a friend to whom to recount the successes and failures that have attended you, a friend to whom you are the perfection of all virtues, who if she cannot speak with the tongues of men and of angels, always stands ready with her sympathy and encouragement to help you over the hard places that come in every doctor's life.

"For you are the half part of a blessed man

Left to be finished by such as she,

And she a fair divided excellence

Whose fullness of perfection lies in you."

While I am recounting with pride the many tasks we doctors' wives of today willingly and unselfishly perform as our share in this partnership, how small any of our self-denial seems when com-

pared with the life of the doctor's wife of fifty years ago!

When she had no modern conveniences to lighten her household tasks, no telephone by which to summon her husband in case of dire necessity, when she had often to give bed and board to the messenger who summoned him out at night, when she sometimes even accompanied him on his errand of mercy.

In those days when a call came at night she would arise with her husband, prepare hot food and hot coffee for him before he started off into the cold, and then after wrapping him well in scarves and coats she would stand at the window, peering out onto the snow, trying to catch a last glimpse of him as he jogged along on his trusty nag, astride the saddlebags that held his drugs and surgical appliances, jogged along a trail across an unsurveyed prairie, forded rivers and climbed rocky hills that were often drifted until nearly impassible, sometimes crossing wooded stretches where the cry of the wolf resounded.

Hers to speed him on his way and hers to stay at home with anxiety mounting in her heart as time went on and he did not return, imagining all sorts of disasters that might have happened on his lonely ride.

We of to-day have all sorts of modern conveniences and appliances to lighten our household labors, the telephone has done away with the necessity for receiving the calling messenger in our homes, the thermo-bottle and quick lunch counter have replaced our sister's gentle midnight ministrations with the coffee-pot and we turn over for the rest of the night's slumber, hearing our doctor-husband starting away in his Mercedes, Pierce-Arrow or Ford knowing that no accident is apt to happen him on good roads with electric lights to guide him and that if disaster does occur it will, at least, be spectacular.

I have dwelt upon the life of the doctor's wife in its selfish aspect, upon her activities that are her own and her husband's aggrandizement, but there is another side.

How often it is her privilege to comfort some suffering and sorrowing individual, how often, from her peculiar knowledge she can stretch out the helping hand to some poor repentant Magdalene and make not only the brotherhood of man but the sisterhood of woman a living reality. In the Uffizi Gallery in Florence there hangs the picture of a beautiful woman. With crossed hands she clasps an alabaster box to her breast, and her tear-filled eyes are upturned to her Master's forgiving face, while about her head there shines the radiance of an indistinct halo. It is the Magdalene by Carlo Dolci and to me the beautiful and significant thing in the picture is that the halo came in response to Christ's forgiving words, "Go, and sin no more."

What a blessed thing it is to be able in some slight degree to bind a halo about another woman's brow.

This is the one thing that the much discussed Feminist movement has done. It has revealed to women the necessity for solidarity, for sex-loyalty, and has made them realize with Kipling that

“The Colonel’s Lady and Judy O’Grady

Are sisters under the skin”.

I want you then, to join me in a toast to the doctor’s partner,

“Here, with a cup that’s stored unto the brim,

We drink this health to her—

Who is of so gentle, so kind, so apt, so blessed a disposition,
She holds it a vice in her goodness not to do more than she is requested.”

And when she leaves for that immortal bourne from which there is no returning, write on the stone that marks her grave, “She hath done what she could.”

SOME OBSERVATIONS IN THE DIAGNOSIS AND TREATMENT OF CHOLELITHIASIS*

A. G. HEJINIAN, M. D., Anamosa.

When we look over the medical literature of the past two decades, we find numerous valuable contributions made to the pathology of cholecystitis and to the etiology and treatment of cholelithiasis. The practical experience that has accumulated during that period, found in the necropsy room, and at the bed-side, at the operating table, from the desired results obtained, alleviating the sufferings of tens of thousands of persons who were afflicted by cholelithiasis, has been marvelously great. Some of our American surgeons not only have been the pioneers in the surgery of gall bladder, but also have brought its operative technic to its nearest perfection. Indeed, they have done colossal work in this line, but is it not strange that after having so much practical knowledge in regard to the pathology and treatment of cholelithiasis, we find our literature comparatively barren as to its symptomatology and diagnosis? I can say that our advancement in gall bladder diseases has been asymmetrical. Still, we find in most of our text books, even published in recent years, described the same cycle of symptoms of cholelithiasis that has been handed down from our fore-fathers, they describe merely one condition, one symptom of cholelithiasis, that is, when the gall stones pass through the biliary ducts and entirely ignore the characteristic symptoms which are produced by this pathological condition as soon as it comes into existence in the gall bladder. All our text books on surgery or medicine, give identically the same pain symptoms under the head, “Hepatic or Biliary Colic,” whether the stones are attempting to pass through the cystic or hepatic ducts or passing through ductus communis choledochus.

*Read before the Iowa State Medical Society, 1913.

Most of them describe thus—"The pains commence in the right hypochondrium or in the epigastrium radiating over the abdomen to the right sub-scapular region." We have heard just the same statements twenty or twenty-five years ago in our lecture rooms from our professors and we have read it in our old text books, the same description of hepatic colic without discrimination of the location of the stones when in motion. It is true, that the last two or three years, our leading surgeons have recognized the existing relations of cholelithiasis with some of gastric symptoms and have stated that some of the so-called dyspepsias and indigestions are manifestations of gall stones, and that we have not innocent gall stones, but they have entirely failed to describe a group of essential symptoms for the approximately accurate diagnosis of cholelithiasis and its location.

I made the following statement in 1906, December 11th, in Iowa Union Medical Society, when I read a paper on the subject, "Gall Bladder Disease and Its Surgical Treatment," some of my hearers will perhaps remember it. First, that gall stones in the gall bladder always produce a class of gastric and other symptoms that have not been recognized by our authorities and described in our text books; secondly, that gall stones manifest different symptoms according to their location. Gall stones in the gall bladder proper might produce an excruciating type of colicky pain, but never begins at the right hypochondrium radiating to the right subscapular region. I have proved these facts before and since that time, and reached this conclusion after very careful observations and investigations of my own cases.

Very often after my cholecystotomy cases, for mere experimental purposes, whenever I am dressing the case, I have taken my long probe and touched different parts of the wall of the gall bladder, invariably the patients have complained, not of pain where I have touched, and not radiating towards the right side of the chest or right subscapular region, but towards the left, more under the left margin of the sternum just above the ensiform cartilage, and according to the extent of the severity of the pressure of the touch, they have complained of pain in their stomach, shooting towards the left subscapular region, nausea, extreme sick feeling, pressure and weight over the frontal aspect of the chest wall, and often they have complained of pain in their cardiac region, but whenever I have tried to insert my probe still farther in the direction of the cystic and common ducts or their approximates this direct or indirect pressure to the cystic and common ducts have produced the same cycle of symptoms as our text books describe, that is pain at the region of right hypochondrium and shooting towards the right shoulder blade.

I have noticed the same phenomena or the same cycle of symptoms after my cholecystotomy cases whenever the outside openings,

the drainage holes have closed too soon before the gall bladders have been restored to their normal condition, before they have ceased to secrete the tenacious pathological, thick mucus which cannot go through the cystic and common ducts without causing their complete occlusion. Under such circumstances, naturally the tenacious mucus will gradually accumulate and cause enormous tension to the gall bladder and thus the patients have suffered as bad as if they were having genuine gall stone colic, not in the same region as commonly understood, but most excruciating pain in their gastric and cardiac regions, extreme pressure on the anterior chest wall, often vomiting, gasping for breath, shallow and short breathing, very restless, great difficulty to keep them still even by ordinary doses of opiates, cold clammy hands and cold perspiration running down their faces. Under such circumstances, as soon as I, or one of my assistants at the hospital, has opened the outside opening to drain out that accumulated tenacious mucus discharge, the patients have immediately felt altogether better, they expressed themselves as feeling like new persons.

As you know, gentlemen, the hepatic plexus receives branches only from the left pneumogastric nerve and also branches from the right phrenic nerve. The gall bladder is supplied by the terminal branches of the left vagus, and the biliary ducts are supplied by the right phrenic nerve in connection with the sympathetic nervous system, and in this manner we can give an explicit reason to the different systems as they manifest themselves according to the location of the stones. If these stones are located and passed through the biliary passages through the right phrenic nerve, pain will radiate towards the right, and if the stones are located in the gall bladder proper pain will radiate through the left pneumogastric nerve and manifest itself in all the organs that are supplied by the same nerve. Just in the same way the pain of an ulcer or of any other disease of the anterior wall of the stomach will radiate to the left, and that of the posterior wall of the stomach will radiate towards the right because the left vagus supplies the anterior wall and the right vagus the posterior wall.

These facts teach us a few important lessons, one is that some gall stones acting as ball valve in the gall bladder can produce a chain of symptoms often colicky in nature but altogether different from biliary colic heretofore described. Again we notice that we may get all the characteristic symptoms of the gall bladder colic without any gall stones in the gall bladder which can be produced by primary cholangitis or secondary after cholecystitis and closing up of the cystic duct from this inflammatory or spasmodic condition, thus causing again to accumulate mucus in the bladder and produce tension and all the symptoms of gall stone colic. Another very important practical lesson is this, that some of our patients who are often complaining to us of their stomachs and of their

hearts, we have diagnosed dyspepsia, gastric catarrh, gastralgia and gastric ulcer and even sometimes we have called them carcinoma of the stomach and angina pectoris, are suffering either from gall stones or from cholecystitis in some form. These are cases that require an early diagnosis and an early interference before they reach such a stage when surgery will not be available for their recovery. We ought to carefully and thoroughly examine each and all our cases by all modern diagnostic means that we have at our disposal. As a rule, the stomach has been the portal through which we receive the first signal of all abdominal and pelvic diseases but from that source alone we cannot make our diagnosis. We ought with a comprehensive mind at once grasp, classify and differentiate the whole symptoms and come to a definite point by exclusions and conclusions. We have not any more idiopathic or simple gastralgia of old authors, we can definitely say that it is always caused by some pathology in the abdominal cavity, gall stones are responsible for the most of them. Jaundice is not any more a characteristic symptom of cholelithiasis, as old authors used to put such a great emphasis on. We have only one condition that causes jaundice, that is, complete obstruction of the hepatic and common ducts, the first one is very rare and the last does happen occasionally. Gall stones in the common ducts do not always produce jaundice, jaundice may subside but gall stones might not have passed through the papilla. The past history of the patient is very important, that of pelvic infection, of typhoid fever, of septic appendicitis and peritonitis, of pregnancy, more with complications of dyspepsia or any other gastric symptoms, of nocturnal colics in the upper part of the abdomen, (I have noticed most nocturnal pains of that region that come after midnight are gall stone colics), of so-called angina pectoris, of periodical difficulty in breathing, weight and pressure on the breast, more after eating, will assist us greatly to reach a definite conclusion in our diagnosis together with the physical examination. Whenever we find marked tenderness on pressure in the region of the gall bladder more so than at the stomach, just under and in the immediate vicinity of the ninth rib near the angle of the costal arch at full inspiration, then at full expiration radiating towards the stomach and upwards causing **weight** and **pressure** on the chest more under the sternum, meanwhile not finding the cardinal symptoms of gastric and cardiac diseases, a case as this is suffering from some form of surgical gall bladder disease and not from gastric and cardiac trouble.

We see so often the statement made that in five to ten per cent of all post mortem examinations have been discovered gall stones but they never have caused any trouble in lifetime, but gentlemen, those are the cases who in their lifetime have complained of gastric and cardiac diseases, and attending physicians have completely failed to make a correct diagnosis and treat them correctly. In order

to verify my statement, I will report very briefly a few of my illustrative cases on whom I have operated.

1. J. H.—34 years of age; family history good; she had about five years ago a pelvic abscess and has been operated for it and from which she has recovered completely. About two years previous, she commenced to have stomach and heart trouble, her case was diagnosed by various physicians at different times neuralgia of the heart and stomach, hysteria, hyperacidity of the stomach, gastric catarrh, etc., at last, about a week before the operation she had severe attacks of colic, so bad, that a big dose of opiates had failed to relieve her and attending physician has been obliged to keep her under chloroform for several hours. I called to see her in consultation, I concurred with the diagnosis made, which was biliary colic. She was taken to the hospital and I made a cholecystotomy which confirmed our diagnosis and her recovery was complete. We noticed in this case, that while the stones were confined in the gall bladder proper they gave her all kinds of gastric and cardiac symptoms for about two years, but the diagnosis was not made, as soon as some of the stones moved forward to the cystic and common ducts, they gave symptoms of hepatic colic, and **only** then it was diagnosed her sufferings was from gall stones. Another important point in this case is that she had previous to her manifesting any symptoms of gall stones, pelvic abscess. Thirty-five per cent of all gall stone cases have history of some form of septic inflammation either of pelvic or abdominal organs. Also pregnancy is a factor in the etiology, on that account we have a great many more female than male patients suffering from gall stones.

2. J. C.—48 years of age; for about nine years has had occasional attacks of severe pains on her breast shooting more to the left shoulder, shortness of breathing, restlessness, cold clammy perspiration, etc., it had been diagnosed at various times by different persons, angina pectoris, hysteria, neuralgia of the stomach, asthma, etc., by physical examination, being more tender at the region of the gall bladder than any place else, at last was diagnosed cholelithiasis. At the operation I discovered a diseased gall bladder full of stones, made cholecystectomy and her recovery was quick and complete. In this case the diagnosis was not made until gall stones produced serious cholecystitis and marked local tenderness.

3. Mrs. D.—55 years of age, German lady, personal and family history good. She has suffered the last two years from her stomach, has lost about thirty-five pounds in weight, now and then her vomiting has been persistent. The case has been diagnosed, carcinoma of the stomach. One of our leading surgeons made the statement to her husband that there is no use to operate on her as she would not live longer than a month. At the examination I discovered her heart, lungs, kidneys negative, spleen somewhat enlarged, stomach tender, liver enlarged, tender all over the right side of the

abdomen. She was very feeble and somewhat jaundiced. I advised her to have an immediate operation. At any rate, an explanatory incision is strongly indicated in a case like this, performed cholecystotomy, removed a large number of stones, explored the stomach, it was normal and she made a complete recovery. A few days after the operation she had ordinary diet, did not vomit any more, left the hospital in five weeks perfectly well. This case did not have at any time the typical biliary colic, on that account her case was diagnosed carcinoma of the stomach.

4. Mrs. A.—60 years of age. They called me to see her on account of her having uterine hemorrhages for a year, her menses had stopped for seventeen years. By examination I discovered her suffering from carcinoma of the body of the uterus. Her family history good, her personal history, had stomach trouble for more than twenty years, has lost thirty pounds in weight. I advised her to have an immediate operation. I made an abdominal hysterectomy with all appendages together, removed the appendix, explored her stomach and liver, found her stomach normal, gall bladder distended with the stones which I removed. This patient has been suffering for twenty years from her stomach, she did not have at any time, biliary colic but has suffered from "gastralgia" so bad that she has used opiates and has formed the morphine habit. After her gall stones were removed, she recovered entirely from her stomach trouble and gradually stopped taking morphine. In this case also the gall stones had caused all kinds of gastric symptoms but it was not recognized because she did not have hepatic colic as described in our text books.

5. O. C.—60 years of age. Six years ago began to have pain in his right hypochondrium, diagnosed gall stones. Had gone to Excelsior Springs for treatment, returned well, kept well for four years. The last two years his pains have returned, diagnosed by two physicians gall stones, advised him to have an operation, was brought to the hospital and I operated on him which revealed duodenal ulcer which was excised, and he was discharged from the hospital in three weeks. The important point in this case is this, that only by pain symptom it was diagnosed cholelithiasis which was not so.

6. K. T.—26 years of age. She has suffered for about a year from her stomach. Suddenly about 5:30 in the afternoon, had been caught with cramps in right side and suffered all night with pain and had been kept under opiates, it was diagnosed appendicitis. Was brought next day to the hospital, found her abdomen distended very much, more rigid on the right side, operated on her as soon as she was prepared, found a great deal of sero-purulent exudate in the free peritoneal cavity and general peritonitis, appendix inflamed but not perforated, removed it, and by a still further examination, I discovered a perforated duodenal ulcer and a single

large gall stone in the gall bladder. I excised the ulcer and removed the gall stone, she made a perfect recovery. This case is in contrast to the preceding one. Both of them had duodenal ulcers, one had history of pain at the region of right hypochondrium without gall stones, the other one had the stone but no history of any form of colic. By pain symptoms alone we ought not reach to definite a conclusion in the diagnosis.

7. J. W.—69 years of age. Has suffered for nine year from his stomach, has been examined by one of our leading internists of Chicago who pronounced it gastric catarrh, advised him to use daily lavage. He had improved under that treatment for a short time but relapsed again. Then he was seen by a local physician who called me to see him in consultation. I concurred with his diagnosis of cholelithiasis. The operation proved our diagnosis and he left the hospital in about four weeks.

8. A. W.—55 years of age. Has suffered from his stomach for twelve years, twice has been in Chicago to see a leading internist. He diagnosed the case gastritis, last time he advised him to remain in a hospital in Chicago where he remained for five weeks under his care, he improved greatly, and returned home. After six months, he had a relapse and was brought to the hospital by his attending physician for operative treatment, diagnosed the case cholelithiasis. When I opened the abdomen, I found the tip of the gall bladder adhered to the first part of the duodenum. When I separated the adhesions, I found perforation of the gall bladder and of the duodenum, nature had made a cholecystenterostomy but he had not felt any better. I excised the ulcer of the duodenum and drained the gall bladder, he left the hospital in a short time entirely well.

Because two of our most prominent authorities on internal medicine had seen the last two cases and had failed to make correct diagnosis, therefore, here I will humbly suggest that it will be a great blessing to humanity if our teachers of medicine and of surgery could come together at least once a year and exchange opinions in regard to certain abdominal diseases. If they had done that twenty years ago, our internists would have accepted at the beginning, as they do now, the fact that appendicitis is a surgical disease, and the surgeons would have saved thousands of lives. There are a good many more questions just as much of grave importance to be settled, and that is the only way to settle them, to have joint meetings of the leading authorities on surgery and medicine. I have a good many more cases illustrative of my points, gall stones found when operating for other pathological conditions, but I deem it unnecessary to report any more.

The treatment of cholelithiasis is surgical. Cholecystotomy with drainage is the ideal treatment if contra-indications do not exist. Primary closing up of the gall bladder incision immediately after

the operation has been done, but it is not advisable because in ninety per cent of those cases, we meet with cholecystitis and cholecystitis itself requires drainage. Cholecystenterostomy is not any more an operation of choice, except when we find some pathological and mechanical obstruction of the common duct and not any possibility to correct it otherwise. Always there is a danger of infection of the gall bladder in cholecystenterostomies, and danger of the patients of ultimate recovery. When there is complete stenosis or obstruction of the cystic duct and otherwise could not be rectified, also in badly diseased gall bladder, cholecystectomy is indicated. One of the most disagreeable features of cholecystotomy has been in the hands of some, resulting unsightly and troublesome fistula. In order to prevent this, it is better to follow Ochsner's rule, we are stitching the gall bladder to the peritoneum, and invert about half an inch of the viscus. In addition to this rule, I have found in my practice, it would be very much help in the process of healing to loosen the peritoneum with its adjacent fascia about half an inch on each side and then stitch the gall bladder to it. When the sewing is completed, it will make a funnel shaped depression, gall bladder in the center it will be suspended together with the peritoneum which will form a suspension ligament in the future. I do not stitch it to the peritoneum alone as there is danger of tearing it off. By taking the subjacent fascia, it makes a solid substantial ligament. This manner of treating of the gall bladder will insure its complete closure within a short time. Also one important feature of this operation is that the gall bladder will hang down in suspension and not by short adhesions which always causes discomfort and uneasiness to the patients. In order to prevent this, I have seen some surgeons bridge over by a rubber tubing or a cigarette drainage from the gall bladder to the skin. The same procedure that is indicated in cases of contracted liver or a small gall bladder which is not possible to stitch to the peritoneum. By leaving in the drainage tube from four to six days, nature throws around it a serious coat which protects the general abdominal cavity, but always there is some danger of leakage of the bile in this manner of disposal of the gall bladder. If there be any spasmodic coughing, sneezing, any sudden or forcible movement of the diaphragm, that acquired bridge might break loose and the consequence might prove to be serious and often fatal. The manner of treatment which I described and by which I treat the gall bladders, will serve all the desired object, and meantime it insures absolute safety.

Discussion.

Dr. Laura H. Branson, Iowa City: I have been very much interested in this paper, from the fact that I have been carrying on a special line of study on the subject of cholelithiasis. As a result of that study I have been surprised to find that there is no constant symptomatology. Kehr,

in his 1668 cases of gall stones, states that it is only in exceptional cases a correct diagnosis may be made. At the time of the operation for other causes, surgeons in discovering the gall stones to be present, have been able to trace the history of the case backward to its initial lesions, thereby establishing a correct diagnosis for gall stones.

I am particularly interested in this subject from the fact that gall stones occur more frequently in women than in men, and more frequently in married women than in single. In fact, it could almost be placed in the child bearing period. Ochsner has called this a surgical disease. It is a question whether in pregnancy it could be so designated, and if so, it seems to me we should operate in pregnancy just as freely as outside of that condition.

A Member: How many of us are allowing gall stone cases to go without doing anything for them, because they are not making very much of a disturbance? How many of us have been doing that in the past? I know I have been doing that. I am not a surgeon. I think there are a very large number of them that do not make very much disturbance. Here is the point in my mind: undoubtedly gall stones cause a great variety of symptoms, and all the study as to cancer in the future indicates that cancer is increasing faster in our population. The surgeons tell us that there is a time in the history of cancer when it is local, and an early operation is comparatively safe. When we find that we have cancer, we have generally passed that point. Now, if we could get hold of all these chronic troubles in the stage where they are not making much trouble, and this includes gall stones, and cure them by some means medical or surgical, how much it would lessen the cases we have to deal with. The late studies on cancer prove more and more that there was some irritation previously. Undoubtedly, if we just become a little more observant, we will find that we are passing a whole lot of things that probably do not interfere very much. We may notice little spots on the face, not malignant, but always dangerous.

Just one point more. The general practitioner wants more specific knowledge about gall stones. When is he sure they are there? If we had better diagnostic means, we would feel better about sending them to the surgeon. I know two cases in my country where the gall bladder was opened and no gall stones found. Still they had an infection and would probably have had ball stones eventually. We would rather know more about it.

Dr. Walter E. Scott, Adel: It is my impression, a great many cases of ulcers of the stomach are diagnosed as gall stones, and many cases subjected to an operation get well because of the time spent in bed on the light diet. I know many cases of gall stones, so diagnosed by a number of good physicians, that have recovered, who never passed gall stones or were operated on. I remember particularly a cure of this kind a lady who had had frequent attacks of gall stones so called, and who had to have hypodermics of morphine repeatedly over a period of 10 years, who never had an operation and never passed gall stones, but recovered absolutely and been well now for 8 years. I know a number of cases that belong in this category, that have after a period of several years of illness and different forms of treatment, fully recovered without an operation. I had in my hospital a patient whose case was diagnosed as gall stones by several western surgeons, and operation advised by each, who was cured after being three or four weeks in bed, under a diet suitable to cases of gastric ulcer. It seems to me, the general practitioner is too prone to say in cases of illness, with periodical pains in the epigastric region, that you have gall stones and you must have an operation. I believe fully, that one half of the cases that are diagnosed as gall stones by the general practitioner are cases of gastric ulcer, of duodenal ulcer, and are medical cases, and will get well under medical treatment, which medical treatment should precede operation interference and not follow it.

A Member: I just want to say a word in regard to some of these cases, and that is, as to how shall we know there are gall stones there or not? I have had one case especially where there were repeated attacks, some lasting as long as three days, with a decided jaundice following. That patient has not had an attack now for five years. I have had other cases similar to that who had repeated attacks and severe pains and jaundice following. I do not claim I have anything that will dissolve them. There is nothing in the medical treatment I know of that would have cured them, and yet the cases get well.

Dr. C. F. Waher, Ft. Madison: In view of the last you heard, I

want to say, let no man be deceived. In view of the subject of the paper, the patient is supposed to have his case diagnosed and he has got gall stones. Let no man think he can put medicine in the stomach that will creep up the duodenum, then up the duct and hunt like a ferret, sneak up in the gall bladder and dissolve these gall stones. Great God in Heaven, be merciful on us poor sinners, with such ideas. We have cholelithiasis. It may be only a cholecystitis. But if we have made out a case as gall stones—and it may be just like the German says: A blind hog may find an acorn—so will a little measley gall stone sometimes pass. I have seen Dr. Graham in Senn's Clinic, painfully hunt one day, and he did finally find a wee bit of a gall stone. Such a little mite of a stone may pass, after taking medicine or a drink of water, or after taking olive oil, or pancakes, it does not matter what he took, and the credit given some drug, I have had patients who had gall stone colic, many attacks, finally they ceased because the stone passed, not because of any drug they took, as no drug today exists in the wide, wide world that dissolves stones in the gall bladder. I have seen other surgeons one of them my son open the gall bladder, after the patient had been treated years for neuralgia of the stomach and what not, and 680 gall stones were extracted. No medicine on earth would have taken them out.

Gentlemen, do not promise your patient you are going to get gall stones every time you operate. But that gall bladder must be drained just the same. Again, I say, be ye not deceived.

THE PUBLIC HEALTH WORK OF TWENTY-SEVEN IOWA CITIES AND TOWNS

MARK F. BOYD, M. S., M. D., Boston.

With the idea of ascertaining the amount and scope of public health work done in Iowa cities and towns, a questionnaire was prepared and sent to the city clerks of all cities and towns in the state having a population greater than two thousand asking for information for 1912-13. Replies were received from Cedar Rapids, Waterloo, Burlington, Ottumwa, Muscatine, Boone, Oskaloosa, Charles City, Fairfield, Shenandoah, Cherokee, Carroll, Le Mars, Knoxville, Sheldon, Eagle Grove, Denison, Indianola, Iowa Falls, Algona, Jefferson, Osceola, Harlan, Villisca, Hawarden, Lake City and Tipton. While only twenty-seven cities and towns are represented, they are all from portions of the state, and the information may be considered fairly representative of Iowa conditions. The total population represented is 197,310 (1910).

The number of meetings of the City Council as a Board of Health may be considered indicative of the amount of attention given to the public health by the city authorities. The Burlington Board of Health met 52 times (weekly), the Ottumwa, Oskaloosa, Muscatine, Carroll and Iowa Falls Boards met 12 times. The Boards of Fairfield, Sheldon, Indianola, Osceola, Hawarden, Lake City and Tipton, met only twice, the minimal numbers of meetings provided by law. The Harlan Board met only once and the clerk of the Algona Board was uncertain as to the number of meetings held.

Table showing the Board of Health expenditures of twenty-seven Iowa Cities and Towns, the rate of expenditure per capita and the salaries paid to the health officers.

| No. on Map | Name | Pop. 1910 | Expendi- tures B. of H. | Cents per capita | Salary Health Officer |
|------------------|--------------|--------------|-------------------------------|------------------------|-----------------------------|
| 1 | Cedar Rapids | 32,811 | \$8,200.00 | .24 | \$ 720.00 |
| 2 | Waterloo | 26,693 | 1,500.00 | .056 | 600.00 |
| 3 | Burlington | 24,324 | 6,000.00 | .24 | 1300.00 |
| 4 | Ottumwa | 22,012 | 750.00 | .068 | 750.00 |
| 5 | Muscatine | 16,178 | 600.00 | .037 | 600.00 |
| 6 | Boone | 10,347 | 437.00 | .042 | 100.00 |
| 7 | Oskaloosa | 9,466 | 1,500.00 | .159 | 1200.00 |
| 8 | Charles City | 5,892 | 30.00 | .005 | 0.00 |
| 9 | Fairfield | 4,970 | 350.00 | .07 | 25.00 |
| 10 | Shenandoah | 4,976 | 250.00 | .05 | fees |
| 11 | Cherokee | 4,884 | 50.00 | .01 | 50.00 |
| 12 | Carroll | 3,546 | 25.00 | .007 | 25.00 |
| 13 | Le Mars | 4,157 | 150.00 | .034 | 150.00 |
| 14 | Knoxville | 3,190 | 100.00 | .031 | 0.00 |
| 15 | Sheldon | 2,941 | 20.00 | .006 | 20.00 |
| 16 | Eagle Grove | 3,387 | 240.00 | .072 | 100.00 |
| 17 | Denison | 3,137 | 225.00 | .072 | 25.00 |
| 18 | Indianola | 3,000 | 20.00 | .006 | 20.00 |
| 19 | Iowa Falls | 2,797 | 50.00 | .017 | 50.00 |
| 20 | Algona | 2,908 | 50.00 | .017 | 0.00 |
| 21 | Osceola | 2,416 | 50.00 | .020 | fees |
| 22 | Jefferson | 2,477 | 0.00 | .00 | 0.00 |
| 23 | Harlan | 2,570 | 25.00 | .009 | 25.00 |
| 24 | Villisca | 2,039 | 139.00 | .068 | 100.00 |
| 25 | Hawarden | 2,107 | 25.00 | .012 | 25.00 |
| 26 | Lake City | 2,043 | 40.00 | .018 | 0.00 |
| 27 | Tipton | 2,048 | 25.00 | .012 | 25.00 |

Total population 197,310

Total expenditures \$20,950.00

Per capita expenditure .106 cents.

The total expenditures of these cities and towns for the year for public health purposes, together with the per capita cost and the salary paid to the health officer is shown in the accompanying table. Cedar Rapids, Burlington, and Oskaloosa are the only cities whose expenditures exceed ten cents per capita. The per capita expenditures of Charles City, Carroll, Sheldon, Indianola and Harlan can be estimated only in mills, while the town of Jefferson did not spend any money on the public health. Burlington pays its health officer a salary of 1,300.00 a year; Oskaloosa, \$1,200.00; Cedar Rapids, \$720.00; Ottumwa, \$750; Waterloo and Muscatine each \$600.00. In Charles City, Knoxville, Algona, Jefferson and Lake City the health officer receives no compensation. In Shenandoah and Osceola the health officer receives fees for services rendered the town. The other cities and towns pay their health officer between \$25.00 and \$150.00 a year.

Oskaloosa is the only one of these cities which requires that her health officer devote his entire time to the services of the city and also that he have some training in public health work. The state

board of health requires that all health officers be graduates in medicine, but there are many features of the health officer's duties that require training not obtained in the usual work for a medical degree. A health officer, who in addition to giving his attention to the health of the city or town, endeavors to practice medicine, will always work at a disadvantage. He will, as a rule, give attention to the field of work yielding him the largest income and will very frequently arouse the antagonism of the other physicians of the vicinity, who often believe, rightly or wrongly, that the health officer uses his official position to increase his private practice at the expense of the practice of the other physicians.

The State Dairy Commission supplies milk inspectors to all cities having a population over 10,000 and through the co-operation of the Commissioner it was possible for the Health Officer to act as milk inspector of Oskaloosa. Dr. Thompson of the State Dairy Commission is doing splendid work in educating the dairymen of the smaller towns to produce clean milk, and the dairymen as a class are eager to accept his suggestions, but one man cannot commence to give the milk supplies of the smaller cities and towns the needed attention.

Medical inspection of school children is made by the health officer in Muscatine, Oskaloosa, Eagle Grove Iowa Falls, and Lake City. Burlington has a school nurse for this work. In Ottumwa, Le Mars and Charles City school inspection is only made in emergencies.

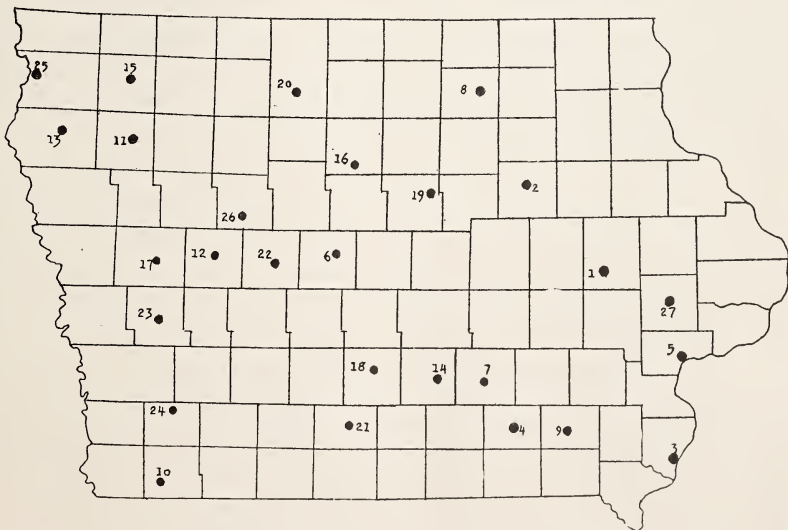
The water supply of Waterloo, Boone, Charles City, Cherokee, Carroll, Eagle Grove, Iowa Falls, Algona, Jefferson, Lake City and Tipton comes from wells one hundred or more feet deep, a source as a rule not likely to become contaminated if properly protected. Muscatine, Shenandoah, Le Mars, Sheldon, Denison, Harlan, Villisca, and Hawarden obtain their water supplies from the ground water by shallow wells. Cedar Rapids uses water from deep wells and the Cedar river; Burlington from the Mississippi river; Ottumwa from the Des Moines river; and Oskaloosa from ground water and the South Skunk river. Fairfield, Knoxville and Osceola obtain their supply from impounded surface waters. A water supply from a deep well may be safeguarded so that contamination is impossible, and chemical or bacteriological examinations of the water once or twice a year should be made as a check on the efficiency of the protection of the well. Ground water, river or surface water supplies should be examined frequently, at least once a week. Of the cities obtaining a supply from ground, surface and river waters, the Cedar Rapids water is examined daily, by the chemist of the water company; the Oskaloosa water three times a week; the Burlington water weekly; the Ottumwa and Sheldon water monthly; the Denison water four times a year, the water of Le Mars and Eagle Grove twice a year, the water of Muscatine, Fairfield, Shenandoah, Har-

lan, Villisca and Hawarden is examined once a year, the Knoxville water is examined occasionally, and the Osceola water not at all. There is ample opportunity too for the contamination of the water supply of these cities with a ground or surface water supply, that neglect the weekly examinations of the water, which will remain undetected until the occurrence of a water-born epidemic.

It is impossible for the water and milk supplies of a town to be properly supervised and safeguarded unless ample laboratory facilities are provided. Oskaloosa has provided a well equipped municipal laboratory for the Board of Health work. Boone also has a city laboratory. In Waterloo, Burlington, Ottumwa and Sheldon laboratory examinations for the city are made at the office of the Health Officer. A well equipped laboratory is a well nigh indispensable adjunct to all forms of public health work.

Private enterprise in Burlington has established a child welfare station and this is the only attempt among these cities and towns to reduce infant mortality. Efforts have been made in Burlington, Muscatine, Oskaloosa, Charles City and Le Mars to reduce the fly population of these cities, but Oskaloosa and Charles City permit privies on sewerred streets. Waterloo, Fairfield, Shenandoah, Cherokee, Sheldon, Denison, Indianola, Algona, Harlan, Villisca, Hawarden and Lake City also permit these nuisances on their sewerred streets and in Knoxville privies are not allowed on sewerred streets within a district four blocks from the city square.

It is to be regretted that the lack of adequate registration of



births and deaths in Iowa prevents a comparison of the gross mortality rates for each of these cities and towns, and also the death rates from the principal contagious diseases. The gross mortality rate for Cedar Rapids for the year from Apr. 1, 1912 to Mar. 31, 1913 was 13.3 per thousand; for Burlington, 13.4 per thousand. In

Oskaloosa for the year July 1, 1911 to June 30, 1912 the rate was 13.5 per thousand, and for the 1912-1913, after the city secured a full time health officer and gave more attention to the health of the city, the death rate per thousand dropped to 10.8.

The health officers of Cedar Rapids, Burlington Muscatine, Oskaloosa, Fairfield, Le Mars, Sheldon, Eagle Grove, Denison and Lake City present an annual report of their work to the local board of health.

At present none of the towns of five thousand population and less have sufficient funds for health work to secure the services of a full time, properly trained health officer, and under these conditions it seems that the best plan for public health administration under Iowa conditions must be based upon the county as a unit. All towns of 8,000 and above can well afford to secure a full time health officer and to give him the necessary assistance in his work, and not be included in the health administration of the county as a whole. Towns of less than 8,000 or thereabouts, in population, could be under supervision of a full time, properly trained county health officer, with adequate assistance. Any plan for the proper control and eradication of communicable diseases from a state or city must be broad enough to include within its scope the country districts, for otherwise the country districts will always assist in keeping alive small foci of infection which constantly are being introduced into the towns and cities with disastrous results.

Iowa has ample facilities at her state university to train men for public health work. A properly trained health officer need not necessarily be a physician, although a thorough medical training is of great advantage. At present, however, in the unorganized condition of public health administration in Iowa the demand for such training in a health officer is limited.

OPERATIVE TREATMENT OF MAMMARY CARCINOMA

C. E. RUTH, M. D., Des Moines.

Few surgeons have had much fear in recent years of local recurrences following excisions of the mamma for carcinoma since due care is taken regarding adequate skin and fascial removals. Complete removal of all axillary lymph nodes and all lymph bearing tissues again reduced fear of secondary recurrences by a large percentage.

The use of the x-ray, post operative, as an additional safeguard against recurrences has proven disappointing to many surgeons who have under it's influence noted dissemination of carcinoma.

With improved operative technic including early and complete mammary and axillary excision of all tissue which might possibly lodge carcinomatous infection, the benefits from the greatly lessened recurrences were offset largely by the fact that 31 per cent of cases operated upon (see statistics by Dr. Greenough) for carcinoma of the mamma had edema and swelling of the arm, and many to the degree of incapacity. In my own experience, and this is corroborated by numerous other workers, pain of a gradually increasing severity accompanied the edema and incapacity occurred or independent of one or both. The pain when present gradually increased in intensity and became agonizing and unbearable.

Some of my cases I am sure would have been thankful for a return of the carcinoma to end their misery. The cause was not far to seek, many surgeons were loathe to remove the pectoral muscles which were rarely involved, besides the removal of the pectorals was believed to seriously impair the power and usefulness of the arm.

The result was that the most operators after removal of all the glands and adipose in the axillary space, as well as the mamma, left the axillary vessels and nerves entirely denuded for their entire length in this space. The dead space thus formed could not be collapsed and as a result a cicatricial granulating tissue material grew in the axilla surrounding these important structures and as time elapsed gradual contraction made their bite a thing to be dreaded by me equal, to if not more, than the original trouble.

It is impossible to collapse the axillary space with the pectoral muscles intact and this inability to close the space favors suppuration and increases the amount and final density of the cicatricial tissue, but does not prevent it's grasping the vessels and nerves while it insures the serious limitation of the arm movements by binding the arm to the thorax and at the same time nullifying the benefits of the pectoral retention.

Removal of the pectorals made it possible to force the integument down into the axilla and thus more easily close the space, but skin, thoracic wall and axillary vessels all bound together by cicatri-

cial granulation tissue were found to be quite as serious in their obstruction and compression bite as to follow the plan of leaving the muscles intact.

In 1902 a pupil of mine, Dr. I. S. Buzard, operated for mammary carcinoma and again the next year did a secondary operation for recurrence in the same patient. In 1904 I was called by Dr. Buzard to relieve the patient, if possible, from the terrible pain incident to compression of the axillary nerve cords by the cicatrix which closed the old dead space resulting from axillary enucleation which he had done according to my teaching. There was no recurrence of the carcinoma and the patient was well, save from the cicatricial limitation of movement and the unbearable compression pain. Suf-

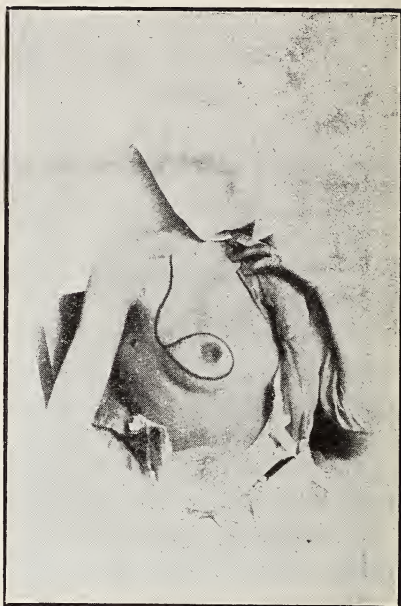


FIG. 1.—Represents the general incision of the integument. A spot directly below the axilla should indicate the point where the stab drain passes through the posterior flap. This drain is left in place usually two to four days. It often becomes necessary to modify this incision on account of the variation in location and extent of the malignant deposit.

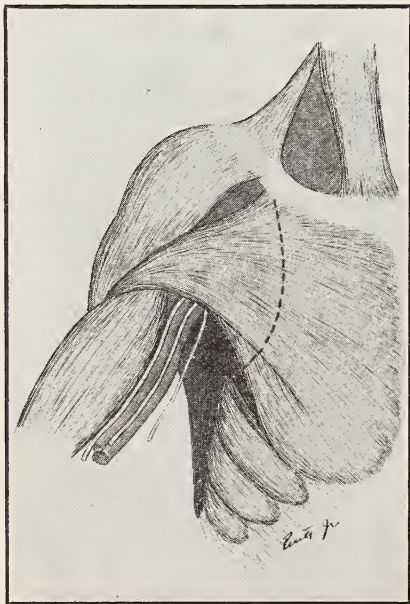


FIG. 2.—Indicates the line of section of the Pectoralis Major. The finger is passed under muscle and the muscle is cut by the scissors. The Pectoralis Minor is sectioned in the same way but a little farther out.

fice it to say we lost the patient from hemorrhage and exhaustion following a prolonged dissection trying to free these structures from the viselike cicatricial bite.

Since then in every case of excision of the mamma and axillary enucleation I have divided the pectorals from the clavicle to the lower border of the axillary space, and the outer part of the muscles are then retracted outward and the inner portion retracted inward, thus at once freely exposing the entire axillary space which is rapidly and easily cleared from above downward under easy sight at every step. The glands and adipose tissue of the axilla are surrounded by gauze as the enucla-

tion proceeds and they are finally removed with the mamma, going wide of all probable deposit.

The inner or thoracic portion of the pectorals I usually remove as they can serve no useful purpose and non-removal may represent a danger, though small.

The distal part of the pectorals which were retracted outward are now brought back and carefully sutured to the thoracic wall above and to the latissimus dorsi and teres major below, directly in contact with the axillary vessels and nerves so as to entirely obliterate all dead space and reduce to an infinitesimal amount the cicatricial tissue which will or can form between the elastic pectoral perimysium and the vessels.

The advantages of this procedure are not alone the complete obliteration of the dead axillary space but the reduction of the danger of sepsis by prolonged drainage from a non-collapsible space and the preservation of quite or almost perfect power and range of muscular movement.

The outer part of the pectoral is quite as strong as the entire muscle but allows at first a slightly lessened range though later the patients usually complain of no limitations of movement. Some of my patients deny absolutely any diminution of either range or power of the arm.

Again, the distal part of the pectorals used in this procedure have hardly been known to be secondarily involved in carcinoma and so may be used without a particle of hesitation to cover the axillary vessels, obliterate the axillary dead space and eliminate the

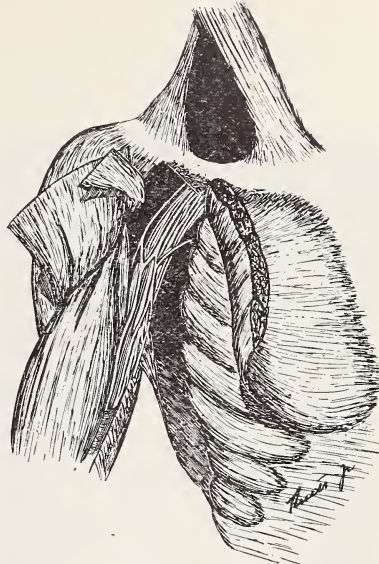


FIG. 3.—Represents the axilla exposed and all glandular and gland bearing tissue removed, the distal part of the pectorals turned outward and the inner portion ready for removal as no longer serving any useful purpose.

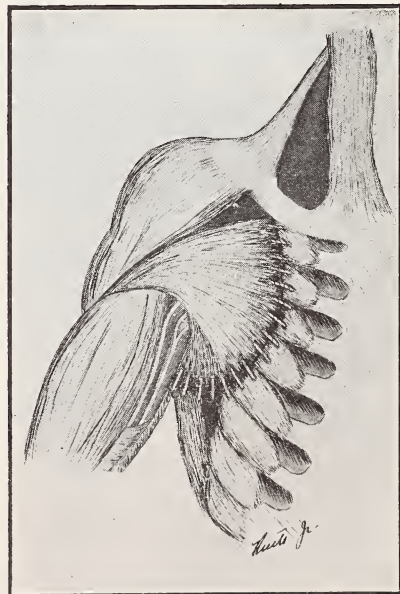


FIG. 4.—The inner part of the pectoralis removed and the distal part sutured in position in contact with the axillary vessels so as to obliterate the axillary space entirely and prevent formation of cicatricial compression tissue.

compression curse of edema, im-

paired or destroyed function and torturing pain which is reported in thirty-one per cent of these unfortunate cases.

Two years after I begun the use of the above method, Dr. J. B.



FIG. 5.—Mrs. S. (aged 45). Operation done eight days before but sutures not removed until the next day. The drainage opening always made in the posterior flap shows directly below the axilla. Union was immediate throughout without a particle of pus formation. The tubal drain was left in position three days.

The extensive undermining needed to secure coaptation and very wide tegumentary excision caused a peculiar outline to the wound though the incision originally followed very closely the outlines indicated in Fig. 1.

Now the 12th day after operation she can put her hand unassisted on top of her head.

without any knowledge of the other's work, were using muscular tissue to cover in the axillary vessels to fill up the dead axillary space and prevent cicatricial edema, limitation of motion and pain. The plan I have used, practically without variation, preserves the entire muscular strength of the pectoral, only shortened, and perfectly closes in and obliterates the space. The blood and nerve supply to the distal part of the pectoral is retained without serious

Murphy, I learned was using a strip from the lower border of the pectoralis major for the purpose of covering the axillary vessels and nerves and after enucleation to overcome the cicatricial contraction. Later he at times used the latissimus dorsi in the same way for the same purpose.

I have not been able to learn the exact date when Dr. Murphy began his work, but in 1906 he published an article on the subject and illustrated his operative method.

I began the method which I have not found it necessary or wise to vary, in the early part of 1905. Impelled by the same necessities, Dr. Murphy and myself,



FIG. 6.—Five weeks after operation showing range of movement. The arms were extended and maintained without pain or discomfort. Convalescence was uninterrupted.

impairment. Some of my cases have been able in eighteen days to put the hand well above the head and none after a few months have reported any marked limitations of range in movement. I have not



FIG. 7.—Photo of Mrs. C., 18 days following excision of left mamma, all axillary lymph nodes, and inner portion of the pectoral muscles. The distal portions of the latter were sutured to the chest wall and lower border of the latissimus dorsi, both muscles being placed in contact with the axillary vessels and nerves. In this manner the entire axillary space was obliterated.

Patient was able to place arm in position shown in photo without aid or discomfort, but the hands were clasped so as to minimize the liability of movement during exposure of the plate as the photo was taken under adverse circumstances. See also Figures 8 to 13 inclusive, taken six months later.

promised any of my patients that the power and use of the arm would be perfect but some of them declare positively that the use of the arm is perfect in power and range in all positions.



FIG. 8.



FIG. 9.

Mrs. M., operated upon five years ago writes, "I have just as good use of it as the other arm notwithstanding you told me I never

would. I can rub on the wash board, carry coal and water and use it just the same as the other one and there is never any soreness, pain or stiffness of any kind."



FIG. 10.

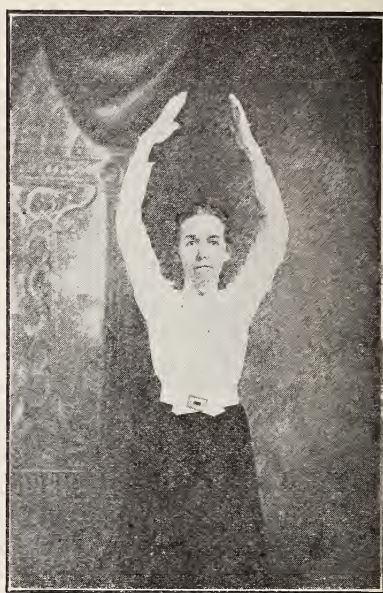


FIG. 11.

Miss S., patient operated upon four and one half years ago writes, "the arm goes up as straight as it did when I was in gymnas-

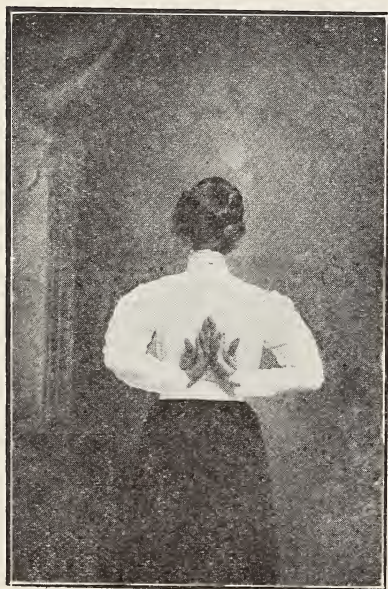


FIG. 12.



FIG. 13.

ium practice. The effects that I notice are that in reaching for things at a distance it will not stretch quite as far as formerly, the

elasticity seems less besides I cannot hold out a weight for more than a moment. I presume with a little regular practice that could be easily overcome."

Extract from Mrs. C.'s letter six months after operation: "I can button any article of clothing down the back that is not too tight. I can clasp my hands behind my head and lie down on them so. I can put my arms akimbo. I can stand flat against the wall and lay my arms straight up the wall. In fact if you were to require any kind of test with the exception of lifting, I think I could easily do it. I have refrained from lifting anything beyond the weight of an ordinary book. I can play on the piano some little time without much fatigue. Can sweep a little. Less than two weeks ago I swept four rooms and a hall, the longest task I have attempted since I came home."

I have used this method exclusively for eight years and in no case has a patient suffered edema, pronounced impairment of function of the arm or suffered pain from compression. The method therefore appears, without adding complication of any kind, to entirely overcome the dangers and disadvantages of axillary glandular enucleation.

The advantages of my plan would appear to be in the utilization of the least dangerous part of the pectorals while there is little or no loss of range or power, and at the same time the object of protecting the axillary vessels from cicatricial compression is perfectly accomplished.



FIGS. 14, 15, 16. Mrs. M. five years after operation showing appearance of operation site and range of movement.

THE VALUE AND LIMITATIONS OF CYSTOSCOPY IN DIAGNOSIS*

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For a quarter of a century following Nitze's first successes cystoscopy occupied a sort of probationary position in genito-urinary surgery. Enthusiasts and critics of equal prominence and influence disputed over its value as a diagnostic aid exactly as when Laennec introduced the stethoscope, and like the stethoscope the cystoscope completely triumphed. The early instruments, it is true, were not all that could be asked for either in mechanism or in results. Late improvements in construction, however, and general experience have standardized the technic, eliminated the uncertainties, and made the cystoscope a veritable instrument of precision with definite indications for its use, with well defined values in its findings, and with certain limitations.

In this paper ureteral catheterization will be considered as part of the text, only practicable details will be discussed and theoretical possibilities will be excluded. An attempt will be made to call special attention to certain facts which are not well appreciated by the general profession.

In the first place, there is no class of surgical cases in which the clinical symptoms and ordinary physical examination are so unreliable, and the diagnostic aid so indispensable as in the surgical diseases of the kidneys and ureters. Brewer in "An analysis of One Hundred and Forty Operations on the Kidneys and Ureters" found more mistakes in diagnosis recorded than in any other group of operative cases. Of fifty-seven cases in which the histories lead strongly to the diagnosis of stone either in the kidney or the ureter, only thirty-two showed stone at operation, in thirteen some other definite lesion was found, and in six, or over ten per cent no lesion was found. Braasch insists the history is not to be depended upon; and this is the experience of investigators and surgeons everywhere.

Nephrotomies performed as the result of mistakes in diagnosis are most lamentable procedures. To begin with they are formidable operations fraught with special dangers, and frequently there follows a stormy postoperative course. Anuria, sudden, profuse, and even dangerous hemorrhage, external or into the bladder, the syndrome of uremia; chills and febrile disturbances, persistent fistulae, and tedious, protracted convalescence are not infrequent complications following kidney operations. Hence the grievousness of erroneous diagnoses. Exploratory nephrotomy is almost never to be thought of and in no sense to be compared with exploratory laparotomy. A pre-operative diagnosis must be made; and, since the clinical data are so untrustworthy, the diagnostic aids, namely, the

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cystoscope and x-ray must be invoked. And let it be remembered that with a good technic negative findings are equally as important as positive findings in the solution of the patient's difficulties.

The value of cystoscopy begins with the simplicity and absolute safety of performance and ends with the definite and unequivocal results obtained. No anesthetic is required except for extremely nervous patients or with cases with strangury, as in ulcerative cystitis. A thorough case history should be taken to guide but not to bias the operator. The general voided or catheterized specimen of urine must be reserved for a thorough chemical and microscopic examination, and for comparison with the separate ureter specimens. Preliminary irrigation is needed in the majority of cases; it is, however, imperative that the examining medium be clear, for with the bladder full of turbid fluid the cystoscopist cannot be sure of what he sees. Children under eight or ten years of age are not cystoscoped—really few patients under sixteen ever present any need for such an examination.

Cases with acute inflammation of the urethra, prostate, or bladder are much to be avoided, not because of the danger of inducing an ascending infection as is generally supposed (for this rarely if ever occurs), but rather because of the local damage which would be caused by the instrumentation, and also because the examination would be apt to be unsatisfactory—the ureteral openings can usually not be found when the bladder mucous membrane is inflamed, swollen, and puffy, and the vesical landmarks obscured or lost. A marked prostatic enlargement interferes greatly with cystoscopy or may entirely prevent the passage of the instrument.

The type of instrument may vary except in one particular, and that is up-to-dateness. Some cases demand a direct cystoscope but the corrected vision oblique instrument is usually the better one.

In the diagnosis of intravesical conditions such as calculi, tumors, either benign or malignant, diverticuli, and the various inflammations and ulcerations, the cystoscope by direct inspection will terminate all uncertainty. This needs no further discussion. Intraperitoneal or extravesical conditions affecting the bladder, as adhesions, tumors, etc., can seldom be recognized with the cystoscope. The vesical portions of the ureters, since they are examined directly by sight, are included with the bladder. In three cases just recently it was our privilege to locate in this portion of the ureter calculi which by the interpretation of the x-ray plate were expected in the bladder.

Perhaps the most frequent cases demanding investigation are those bearing a clinical diagnosis of stone in the kidney or ureter. The most reliable single means of examining for the presence of stone in the kidney or in the ureter above the vesical portion is the x-ray. The skiagraph will exhibit a shadow in over eighty per cent of the positive cases. Depending upon the x-ray alone, however,

will be productive of many mistakes. Small, crystalline, or ureter calculi will fail to cast a shadow, especially in stout patients. On the other hand, occasionally shadows due to other causes than stone will lead the surgeon into unfortunate operations. Errors of both these varieties were recently observed. Hence very few of these cases should be operated upon without first varifying the skiagraphic diagnosis with the cystoscope and ureteral catheter. This verification when the stone is above the vesical ureter will consist entirely of indirect though significant evidence. Unilateral pyuria will be found in eight-five per cent of cases of stone in the kidney or ureter. Hematuria, either gross or microscopic, may be demonstrated in about fifty per cent. Stenosis of the ureter, hydro-ureter, calculus interception of the ureteral catheter, hydronephrosis or pyonephrosis are every now and then encountered and are of vital importance both in the diagnosis and in the surgical disposal of the case. If both x-ray and cystoscopy are employed the presence or absence of stone in any part of the urinary system may be absolutely determined. First take the picture and the cystoscope. The wax-tipped ureteral catheter is not applicable in the male and of little use in the female in the search of the upper urinary tract for stone.

The various suppurative inflammations from the trigone to the renal cortex are readily recognized and located by means of the cystoscope and ureteral catheter. In no other way can a safe surgical diagnosis of these lesions be made. The clinical data in these cases are more reliable than in cases of calculus but still too uncertain and insufficient to meet the needs of the surgeon. For instance, in pyonephrosis, which is the easiest to diagnosticate of all the surgical lesions of the kidney, it is necessary to know before operation whether the ureter is hopelessly blocked, to what extent the affected kidney is functioning, whether or not there is a kidney on the opposite side, whether it, too, is infected, and what functional capacity this kidney possesses. Pus is present in the ureter specimen of pyonephrosis, pyelitis, pyelonephritis, and even in acute septic infarct of the kidney. In all except cases which are either very recent or very old some pus will be found in the urine of the supposed healthy side which clears up usually when the diseased side has received its treatment.

Tuberculosis of the urinary system requires in its diagnosis the same procedure as the suppurative inflammations. In addition, however, special difficulties attend establishing the specific diagnosis and determining the extent of its spread. The kidney is the most frequent seat of the primary focus, the infection reaching here by way of the blood stream, and for a time the disease remains unilateral and confined to the kidney; but when caseation and ulceration begin extension to the ureter and bladder may take place. Infection of the other kidney is very apt to occur probably by the hematogenous route, either from the lesion of the opposite side or

from the old, original focus in the lung, lymph nodes, or elsewhere. In making the diagnosis of renal tuberculosis the clinical history is taken into consideration more than in the diagnosis of calculus; because it more often happens that the final proof, the tubercle bacillus, is not found. Again, it is to be remembered that tubercle bacilli like other bacteria, sometimes make their exit from the body through the kidneys and are found in the urine without any actual lesion being present in these organs. The cystoscopic examination in these cases is especially difficult because the bladder early becomes irritable and intolerant of instrumentation, so that a general anesthetic must be given; and further, the bladder mucus membrane is so thickened and swollen that the intravesical landmarks as well as the ureteral openings are either obscured or entirely lost. The results derived from ureteral catheterization are of first value in the final diagnosis. From the ureter of the affected kidney will usually flow an abundant very pale and slightly turbid urine aptly described by Pilcher as having the appearance of weak lemonade. In this urine pus cells are always present and frequently also red blood cells. The tubercle bacillus can be found in the majority of cases. Very often there will be pus in the urine from the opposite kidney also, and in that case a painstaking search for the tubercle bacillus must be made before the absence of tuberculosis from that side may be presumed. Many recent writers have described a peculiar bladder picture as being pathognomonic of renal tuberculosis. The following elaboration by Strachauer is a fairly representative description;—"The cystoscopic picture of the bladder is usually characteristic, and in the great majority of cases is sufficient for making a diagnosis. The appearance of the ureteral orifices is the most characteristic and diagnostic feature in the examination, certain conditions being absolutely pathognomonic. A single ulcer at the site of or just below the ureteral mouth, or a funnel-shaped os with a red, crater-like bottom surrounded with a ragged, undermined, irregularly scalloped margin is absolutely diagnostic. But in early cases the bladder may appear absolutely normal. The ureteral orifice may appear only slightly swollen, puffy, or congested, surrounded by an injected mucosa, or the region of the trigone studded with small, circumscribed, intensely congested spots." We have never been able to make a diagnosis of renal tuberculosis in this way. On the contrary our experience has lead us to believe that most of the vesical lesions in this so-called pathognomonic bladder picture are due not to the tubercle bacillus but to the secondary infection; because, with the exception of the crater-like ureteral opening, we have repeatedly seen all of these lesions in purely pyogenic infections. Our view is further supported by the fact that the military tubercle practically never accompanies the vesical ulcerations. Also, these vesical ulcerations disappear after nephrectomy and this is contrary to the persistent nature of

secondary tuberculosis extensions as seen in other parts of the body.

Tumors of the kidney yield no characteristic cystoscopic results though the demonstration of blood or pus in the ureter specimen may be taken as strongly suggestive. This is especially important if there is present a palpable tumor in the kidney region requiring differential diagnosis.

Malformations and displacements of the kidney are beautifully demonstrated by combining with ureteral catheterization the pyelography of Professor von Voelcker of Heidelberg.

Interesting cases, but difficult problems for diagnosis are those which present hematuria as the only symptom or physical sign. After exhausting all means of examination, and with blood found in both ureteral specimens as the only positive factor a diagnosis of essential hematuria may be made. Bilateral hematuria indicates either hemorrhagic nephritis, acute bilateral infarction, or some general condition of which hematuria is merely a symptom. A differential diagnosis between these conditions is not difficult. Unilateral hematuria stands for the presence of some local lesion.

Conclusions:—

1. The clinical diagnosis of the surgical diseases of the urinary organs is unreliable and insufficient.

2. Cystoscopy furnishes a final diagnosis for all intravesical conditions affecting the bladder or the vesical portions of the ureters.

3. The presence or absence of calculus anywhere above the vesical ureter may be definitely demonstrated by combining the skiagraph and ureteral catheterization.

4. An adequate surgical diagnosis in suppurative, tuberculous, or hemorrhagic conditions in any part of the urinary system cannot be made without cystoscopy and ureteral catheterization.

5. In any case, if inspection of the bladder reveals nothing, and there is neither pus nor blood in the ureteral specimens, and the ureteral catheter passes into the pelvis of the kidney without meeting with obstruction, and the skiagraph shows no shadow, the urinary organs may be dismissed from surgical consideration except for tumor.

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PYELO-CYSTITIS IN CHILDHOOD*

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Within the last few years the attention of the medical world has been called to a symptom-complex occurring in infancy and childhood known as pyelitis or pyelo-cystitis.

To Escherich is due the great merit of having pointed out in 1894 the frequent occurrence of cystitis in children, especially, in his experience, in girls.

Escherich observed in his clinic, amongst sixty cases studied, that the bacillus coli alone or in mixed infection was present fifty-eight times, and the confirmation of his observation by nearly all other writers has led to the establishment and definite recognition of the condition known as colicystitis or coli-pyelo-cystitis.

A few other organisms may have causative relation, such as the staphylococci and the proteus bacillus, but they seem to play a secondary rôle in the process. Of course one must not overlook the fact that the tubercle bacillus is a factor in the pyelitis of children as well as in adults.

Clinically we are able to distinguish two types of the affection. The first is attended by general symptoms, fever, pallor, restlessness; with no apparent cause; no definite evidence of pain or tenderness anywhere; and not a single symptom pointing to a disease of the urinary tract.

A second form presents in addition to more or less general symptoms, indications arising from the urinary tract; increased and frequent micturition, difficulty and pain in passing urine, colic in the abdomen, tenderness of the bladder to pressure, and a characteristic odor to the urine.

Whenever we have to deal with obscure febrile conditions, where general symptoms are prominent, and local symptoms are absent, and this will be the rule in a great proportion of cases in infancy, a urinalysis is absolutely necessary.

The colon bacillus is the common, exciting cause, and through it, this condition has received the name, under which it is sometimes known, of coli-cystitis or coli-pyelitis.

In the acute cases the freshly discharged urine is turbid, is acid in reaction, contains albumin and usually has a peculiar strong odor. The turbidity is due to the presence of pus corpuscles and bacteria, which are frequently the bacillus coli in pure culture. The proportion of bacteria to the number of cellular elements varies. It is not unusual, especially in the milder types, to find the former present in far greater numbers, partly in pairs but usually in groups or in small piles.

The bacillus is readily demonstrated when stained by Loeff-

*Read before the Iowa State Medical Society, 1913.

ler's methylene blue. It is a medium-sized bacillus, with rounded ends; often short. Faintly staining, sharply defined areas are present in the protoplasm of the fresh, methylene blue stain. This irregularity of staining is quite an aid to diagnosis.

In addition to demonstrating the particular organism the acid reaction of the urine is also in favor of the presence of a colon bacillus infection. This acid reaction is constantly wanting in infections due to staphylococci and streptococci, but is present in the tuberculous form, a form which is quite readily differentiated by staining.

The pyuria which is present in this disease is often not sufficient to produce any turbidity or naked-eye deposit in the specimen. This is especially true in the subacute and chronic cases, the ones hardest to diagnose and usually overlooked. The pus present may be only sufficient to be recognized by microscopic examination, and even this must be centrifuged or allowed to stand for a long time for it may show but a few pus corpuscles to the low-power field. Ordinarily when we find pus we expect to find albumin but if the specimen is fresh or the amount of pus small the albumin present is so small in amount that it may easily be and often is overlooked or absent altogether and the urine thought to be normal, unless one routinely uses the microscope.

It is not always easy to obtain the urine of an infant for examination especially if the infant be a girl, as is so frequently the case, but with diligence and an intelligent mother or nurse, if the importance of the urinary examination is realized, one usually succeeds. It is necessary to explain that the object of the examination of the urine is to determine the presence of pus corpuscles. For this reason the urine must be obtained by some other method than by catching in absorbent wool or cotton, which would strain off the pus cells, so essential for diagnosis. A sample squeezed out of any such material would be useless. A simple plan is to let the infant lie for a few hours on a piece of rubber sheeting or oil-cloth until some urine is passed. By a little arrangement of the sheeting the urine will collect in sufficient quantity for examination purposes. It should be pointed out that even a very small amount is sufficient for microscopic diagnosis, for it is the microscopic not the macroscopic diagnoses which is necessary.

The clinical picture of an acute case may be briefly described as follows:—a child, usually a female, acutely ill and in considerable distress, with no definite evidence of tenderness or pain anywhere, is found to have a high temperature, perhaps 104° or 105° and nothing whatever to explain the fever until the urine is examined.

The following case illustrates: Lola L. aged 3 years and 5 months was healthy up to 6 months ago, when she developed a moderately severe attack of measles, from which she seemed to recover perfectly. About two weeks after the disappearance of the rash the

child became suddenly ill, developed a high temperature which remained constant for a week and then gradually begun to fall. The physician in attendance seemed at a loss to explain the condition, though no examination of the urine was made. Since this first attack the child has been seen by a number of physicians and the diagnosis made varied from teething to worms. The fever attacks recurred about every three weeks and there has been a gradual impairment of the appetite and loss of flesh. For the last two months the mother thinks there has been some temperature daily, and the child has become very irritable. In addition to this of late there has been occasional bedwetting, and indefinite pains in the abdomen following eating. The urine was obtained and found to be acid with pus enough to make it just turbid, it had the peculiar heavy odor which is noticeable when the urine is infected with bacillus coli and a bacillus was found in pure culture, in great numbers, which proved to be the colon bacillus. I might state that although there were some signs of bladder irritation, and in spite of the additional fact that large amounts of pus were passed daily, the microscope failed to discover any of the marked signs of involvement of the bladder, which one would expect to develop secondary to the pyelitis.

As illustrated in this case the fever is continuous and may last for many days unless the cause is recognized and properly treated; recognition is only possible if the urine be carefully examined, and hence it is that the fever is so often unexplained. The following case gives somewhat different history.

Margaret, aged 8 years 8 months has had nocturnal incontinence since infancy which has resisted all attempts at treatment persistently. Her mother states that for years she has developed sudden attacks of fever of unknown cause but believed to be intestinal in origin by a number of physicians who have examined her. There is no history of bowel trouble accompanying these attacks, no bladder irritation of any kind except that the nocturnal enuresis was becoming more troublesome. Four years ago—believing that some enlarged tonsils, and adenoids might have some bearing, they were removed by a Dubuque specialist. This relieved her of the occasional attacks of tonsillitis to which she was subject but had no influence on the incontinence whatever. She came under my notice three years ago, during one of her recurrent attacks of fever. A general and blood examination failed to account for the condition. The urine seemed clear except for a few shreds, but on examination showed a marked acidity and pus cells in considerable number and many bacteria which proved later to be colon bacilli. Under treatment the temperature disappeared in the course of a few days. In the course of a month the enuresis stopped.

Colon bacilli were present but in decreasing numbers for several months. There is no doubt in my mind that this was a chronic colon

bacillus infection with acute exacerbations present since childhood, and this urinary condition explains the persistent incontinence which so long resisted all forms of treatment.

Considerable stress has been laid upon the occurrence of shivering or chill as an early symptom. Chills are extremely rare in infancy and childhood from any cause and their occurrence with pyelitis might be of considerable diagnostic value. However in a series of twenty-one cases that have come under my observation a distinct history of a chill was present in but three.

As stated the bacteriological evidence hitherto points to the bacillus coli communis as being the usual though perhaps not the constant cause of the pyelitis. Of the twenty-one cases studied this organism was demonstrated fourteen times. For these studies absolutely fresh urine specimens are required and the failure to obtain these in the remaining seven undoubtedly had something to do with the failure to isolate the colon bacillus as the primary and all important exciting agent. Seventeen of the infectious were made in females, and half of these were in infants under five years, and a majority of the other half gave histories dating back to early infancy. This suggests that the infection may occur from below; that is to say, the vulva becomes fouled with feces, and the bacillus coli gains access thus to the urinary tract and for some reason finds its seat of election in the pelvis of the kidney, and later on as the infection continues, invades the bladder. It is difficult to see why this should be the order of events, why the bladder should escape, why the process should have its primary seat in the pelvis of the kidney. The point which seems to indicate that the kidney is the seat of inflammation is the absence of frequency of micturition early in the disease.

The other possible routes the infection may take are directly from an adjacent infamed intestine to the kidney, an improbable route; and through the blood stream. If the infection be carried by the blood it is difficult to understand why it should be limited to the pelvis of the kidney.

In favor of the suggestion that the infection ascends from below is the fact that of the three boys—one of them had a hypospadias.

Unless one accepts either the direct infection route from the intestine or infection from the blood stream one must suppose that males are infected in the same way females by the passage of the bacillus along the urethra through the bladder and up the ureters, without necessarily stirring up an inflammatory reaction in the bladder primarily.

The treatment of acute pyelitis and pyelo-cystitis is more satisfactory than might be expected.

Cleanliness of the genitals is of the utmost importance in prophylaxis. The object of treatment of course is to eliminate the causative organisms—the colon bacillus. The urine is almost always acid

and often the acidity is marked. Changing the reaction of the urine seems to afford a less suitable medium to the bacterium concerned. In case of an acid urine such as this, the alkaline salts, such as the citrates of potassium and sodium, the acetate of potassium and the bicarbonate of soda are used.

Of these the potassium or sodium citrates are the best. Their free administration has a marked influence, as well, in arresting the fever and stopping the pyuria and bacilluria. The drug must be given in sufficient doses to make the urine alkaline or at least neutral, and keep it so until the symptoms have all subsided.

In an infant a dose of from 20 to 24 grains of the potassium salt is necessary in the course of 24 hours, but 25 to 50 grains may be required. Another drug highly recommended and much used in all infections of the urinary tract is hexamethylenamine. In the adult it is often a specific; but in children not always.

The activity of the drug seems to depend on the liberation of formaldehyd in the course of its elimination by the urinary tract. Some authorities claim that this liberation occurs only in an acid medium and insist on the simultaneous administration of benzoic acid to maintain this acidity. Certain it is that hexamthyleneamine seems at times to be without value.

My plan is to give it a thorough trial in all cases; first in combination with potassium citrate, if this is not satisfactory giving the citrate alone. If neither of these two methods seem to help I combine hexamethylenamine with benzoic acid and eliminate the potassium citrate, for a time at least. In an infant 12 to 30 grains a day seems necessary. In a rough way one can guage the action of hexamethylenamine by watching the urine for the odor of formaldehyd. Vaccine therapy; studies in immunology against pathogenic bacteria have brought hope in abundance to the physician and results in some measure.

A certain number of the more chronic cases resist the hygienic and medical treatment and show recurrences. The pus may be greatly reduced in amount or disappear altogether for a time, the child improve in appearance and weight when in spite of continued therapy relapses follow. A trial at vaccine therapy is here indicated. This method has been rather extensively used with but moderate success. A few cases that have resisted medical treatment have responded readily to vaccines. These of course were chronic cases.

The results are better in acute colon infections but it is the acute processes that our drug therapy is so effective and is preferable.

Discussion

Dr. Frank M. Fuller, Keokuk: The paper is one of intense interest, because the general practitioner is the one who deals mostly with children, and yet, strange to say, I think it is on the conscience of every man, that the general practitioner fails to recognize his responsibility in regard to the diagnosis of disease, particularly of infants, and lets them go.

I am very glad Dr. Moes has presented to us this matter of pyelo infection in infants. A child may have damage done that may last all through life, for which we are responsible, unless we take measures to make a careful diagnosis.

As to the examination of the urine, the doctor says, that he puts the baby on a piece of oil cloth and allows the urine to escape from under the child. It looks to me as though there was a grave chance for infection, the urine coming down over the anus. I use the method suggested, of attaching a small test tube, or a better method still, I think, a small glass or tumbler over the vulva.

We must not forget the fact that gonorrhea is an extremely common condition among little girls. You do not need to question that fact, if you do, for instance, to a place like the Cook County hospital and out on the porch there, you will find little girls suffering from gonorrheal infection.

Dr. C. F. Wahrer, Ft. Madison: One word in regard to the therapeutic paradox. The reader recommends the use of citrate of soda and the various alkalies to alkalinize the urine, there he advises benzoate of soda, and urotropin, both tending to acidify the urine. I wish he would clear that up for us when he comes to reply.

Dr. M. J. Moes, Dubuque: In regard to the danger of secondary infection of the urine specimen, I simply mentioned the method of putting the child on an oil cloth, because mothers can understand it more readily and you do not have to complicate matters by asking them to use the test tube or other contrivance. Of course, the paper did not attempt to deal with the various methods of collecting urine. I simply gave that as a suggestion.

In the pure culture obtained, especially if there be pus, the colon bacillus is present in such large numbers that for practical diagnosis it does not make much difference if a few organisms are gathered up about the anus.

Explaining my reason for combining urotropin with benzoate of soda, I think I said it was recommended to be given with acids. Urotropin is not well understood. We do not know why, in certain cases, you get a brilliant result, and in other apparently similar cases, none. It is claimed by some observers that whenever you get the odor of the formaldehyd in the urine, it is successful. Probably the best method is to use the citrate of sodium or potassium alone.

I have had several experiences with urotropin that were interesting. In a number of cases where I used a combination of sodium and potassium citrate, and afterwards added urotropin, I got good results. But once in a while after the urotropin was added some of the symptoms would return. I finally discovered that it was due to the urotropin stirring up a bladder irritation. I mention this, so that if you should have a similar experience, the thing to do is to stop the urotropin until the irritation symptoms have disappeared.

THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

EDITORIAL

The Plan of Hospital Management Changed.

The Board of Education have done the very proper and sensible thing of placing the management of the University hospital in the hands of the clinical professors for teaching purposes. The conditions as they existed were quite impossible and the hospital clearly failed of the purpose for which it was intended. We quote the action of the Board from the Des Moines Register and Leader.

"New regulations have been put into effect by the state board of education governing the university hospital, which has the effect of excluding Iowa City doctors, not members of the medical faculty, from the use of the hospital for their patients.

It also restricts members of the medical faculty to the use of the hospital for patients in their particular specialties. That is, the professor of gynecology can only treat private patients in gynecology; the professor of ophthalmology can only perform eye, ear, nose and throat operations, etc.

The effect will be to send the operative cases of Iowa City physicians, and part of the cases of faculty members, to Mercy Hospital.

This new regulation was the principal demand made by Dr. William Jepson of Sioux City last summer, as the condition upon which he would become a resident surgeon in the hospital, but the state board denied the request, and he resigned.

Later it was found that every surgeon of high standing made the same demand, and the board agreed to these terms in electing Dr. Rowan of Chicago head of the department of surgery. He will in the future be the only surgeon who can conduct an operation in general surgery in the university hospital."

European vs. American Medical Society.

In the eight or ten stronger American schools of medicine, the student has as good an opportunity to learn modern medicine as does the student of the European schools. But American schools range from the highest to the lowest. Side by side with schools of the best modern type, which are preparing men in a thorough way for the practice of medicine with a conscientious appreciation of the rights of the public, stand other schools whose effort is to get the ill-trained and the unfit medical practice by the shortest route which the varying route which the varying laws of our states will permit.

Boston offers to medical students at the same time such extremes as the Harvard Medical School and the Boston College of Physicians and Surgeons; New York presents the medical schools of Columbia and Cornell and at the same time leaves open for the unwary the doors of the Eclectic Medical College; Baltimore presents to the medical student a choice between the John Hopkins Medical School and the Maryland Medical College. Chicago invites the candidate for medicine to choose between such institutions as the medical schools of the University of Chicago and of the Northwestern University on one hand, and utterly unworthy agencies for medical training, like the Bennett Medical College, the Jenner Medical College and the Hering Medical College, on the other; St. Louis presents the newly organized and endowed school of Washington University and the purely commercial enterprise known as the American (Barnes) Medical College. These are not frontier towns. They are our oldest and richest centers of civilization. Yet even in these the state of public opinion, and of legal enactment, and of medical ethics is such that the worst in medical education can flourish alongside the best. The state of California, which contains the medical schools of the state university and of Stanford University, also countenances a group of the worst schools in the country, and recently chartered a "College of Medical Evangelists," where the "subjects of hygiene and sanitation are studied from a biblical standpoint," and the degree of M. D. is given for a course which includes 900 hours of Bible, 540 of the practice of medicine, 250 in general evangelistic field and 240 in both care of the sick. This situation, according to Pres. H. S. Pritchett of the Carnegie Foundation, who discusses this subject in a recent issue of *The Journal of the American Medical Association*, forms the most striking contrast between medical conditions in America and Europe.—(*Delaware State Medical Journal*.)

Cancer Control.

The distressing number of deaths from cancer creates an interest in everything that relates to the disease. It has been our purpose to offer to our readers the best we find in literature touching the means that in any way may lessen the mortality from this disease. Some of the brightest minds in our profession are doing an immense amount of work to place within our reach the fullest possible knowledge of the problem. Among the most prominent is the distinguished Johns Hopkins surgeon, Joseph C. Bloodgood. We regret that we cannot publish in full some of the papers of this author, but shall present as full abstracts as possible in serial order.

Under the title of "Cancer Control" Dr. Bloodgood says:—"To improve the results, to increase the number of cures of cancer there are two factors over which we have control,—the duration of the disease and the treatment. Long experience and investigation seem to show that cancer never begins in healthy tissue.

There is always a pre-existing local defect which is benign and in which later there may be a cancerous development.

When this previous defect is situated on the skin or beneath the skin or on the mucous membrane of the lip, tongue and mouth, everyone is aware of the little lesion.

These previous defects or local lesions in which cancer may develop may be called precancerous.

The complete removal or complete healing of these pre-cancerous lesions will in my experience accomplish a cure in one hundred per cent of cases, that is, none of these people will die of cancer from a growth in the situation from which the pre-cancerous growth has been removed.

Such cases cannot be called actually cured of cancer, but we can be quite certain that such treatment prevents cancer in many if not all of the patients treated.

First, little tumors which may have been present since birth, or noticed later in life. These little tumors may occur on the skin as warts, moles or nevi. They may be felt beneath the skin as hard or soft nodules the size of shot, peas, beans or larger, or they may be felt deeper as in the breast, thyroid gland, deep in the neck.

Second, unhealed ulcer of the skin and mucous membrane. Here there may be a wound or a burn or some injury or disease which destroys the skin or mucous membrane. The wound never heals or heals badly and then breaks down, the open sore remains for weeks, months or years, often irritated by the patient. At any time, usually after months or years, cancers may develop in such ulcer.

Such ulcers are especially dangerous on the tongue, a week's delay here is equivalent in danger to six months' delay for a like ulcer on the lip.

Third, some form of chronic irritation of the skin and mucous membrane which does not actually destroy it. For example, chronic inflammation and irritation about bad teeth (cancer of the gum never develops about healthy clean teeth). Inflammation and irritations of the mucous membrane of the mouth, lip or tongue in smokers, from chewing tobacco, or from snuff. This tobacco irritation may lead to the formation of white patches (leucoplakia) or ulcers, or thickening of the mucous membrane. Cancer at any time may develop in these areas of irritation.

All of these pre-cancerous lesions, tumors, unhealed ulcers, areas of chronic irritation and inflammation of the skin and mucous membrane are recognized by their hosts the moment they begin. Delay in treatment is due to ignorance, fear or skepticism.

As stated before, treatment in this early pre-cancerous stage, if proper treatment, should accomplish a hundred per cent of permanent cures.

Any treatment which does not completely remove the little tumor or accomplish healing of the ulcer, or completely excise the

ulcer, or stop the irritation of the skin or mucous membrane, or any treatment which does not completely excise the ulcer the result of the irritation, is more dangerous than no treatment at all.

In this stage good surgery should give one hundred per cent cures.

In this stage bad treatment is dangerous. Far better to delay for good treatment than subject one's self to bad treatment in this stage.

Bad treatment is incomplete removal of the little tumor or ulcer. Irritating treatment which does not completely destroy the cells in the tumor, ulcer or area of irritation. Such irritating treatments are: application of caustics, curetting, improper use of x-rays and radium, and carbon dioxide snow.

The great hope for increasing the number of cures of cancer, and decreasing the number of deaths from cancer, lies in the education of the public and the profession on the significance and potential danger of the pre-cancerous lesion: the education of the surgeon as to the best surgery and the education of the surgeon and pathologist as to the recognition of the earliest stage of the beginning of cancer in the benign precancerous lesion.

Incomplete treatment in this earliest stage often yields worse results than complete treatment in a later stage.

Results in the less malignant of cancer of the breast can be expressed as follows:

All cases (35), 76 per cent of cures.

Early cases (15), 100 per cent of cures.

Late cases (20), 64 per cent of cures.

The results in the more malignant form of cancer of the breast show the same difference in the results between early and late cases as follows:

All cases cured 92, or 36 per cent.

Early cases 12 cured, or 85 per cent.

Late cases 80 cured, or 33 per cent.

Any woman who has a lump in the breast immediately operated upon has the best chance of a permanent cure. If the lump proves to be the less malignant, adeno-carcinoma, her chances are 100 per cent; if it is the more malignant medullary or scirrhus carcinoma her chances are 85 per cent.

The per cent of cures for all cases of cancer in which complete operation could be done and in which the period of time since operation is five years, is now 42 per cent. Five years ago it was only 35 per cent. This improvement is due to the fact that women are coming earlier for treatment.

Every woman should know that if she submits to proper treatment within a few days after she feels a lump the chances are one out of three that the lump is not cancer, and the proper treatment will yield 100 per cent of cures. If the lump is cancer, her chances

are one out of four that it is the least malignant form of cancer, with a possible chance of 100 per cent of cures. At the worst with cancer in this stage the chances are 85 per cent.

Delay, if the tumor is benign, is risky, because at any moment the benign tumor may become cancer. If the lump is cancer when first observed every day's delay must decrease the probability of a cure. Absolutely nothing can be gained by delay.

By incomplete operation I mean excision of the lump or breast and later, days or weeks, after the microscopic diagnosis of cancer, the complete operation. We have only one positive cure. In this case the entire breast was removed and nothing further was done.

These figures absolutely prove the importance of a complete operation in the early stage of cancer. Incomplete operation gives worse results than delay with complete operation when the diagnosis can be made without the aid of the microscope.

Carcinoma of the Lower Lip.

The following figures show the influence of delay and incomplete surgery.

1. Benign lesions of the lip, 8 five-year cases, 100 per cent cures.

These are pre-cancerous lesions. In every case the microscopic examination showed no evidence of cancer, but these are the lesions that the patients who came for treatment with fully developed cancer of the lower lip tell us about as being the little nodule, or sore or wart which they had observed on their lip for weeks, months or years before the non-present full-developed cancer showed itself.

2. Fully developed cancer of the lower lip.

When we have removed the lower lip and not removed the glands we have cured but 7 patients or 63 per cent. The failure to cure in 4 cases was due to the involvement of the glands under the jaw.

It is unfortunate for the good of the public that so much is said about cancer cures. The average layman is looking for an agent that will destroy cancer growths by some mysterious contact or through the influence of some vaccine. What the future may develop in these respects we have no means of knowing but in the meantime we may wisely employ measures which diligent workers have placed in our reach to lessen the mortality from the disease, and it is clearly the duty of the profession and the more intelligent layman to bring to the less fortunate such facts as Dr. Bloodgood presents in this communication.

Clean Advertising.

The Des Moines Capital should be commended for the stand it has taken in relation to certain classes of advertisements. This exclusion is encouraging and should be very much taken to heart by

some of our independent medical journals which look too closely to the profits of doubtful advertisements.

In the same connection we desire to congratulate the St. Louis Star, which has taken up the fight against quacks and quack advertisements, and in ten days completed a clean-up of quacks in St. Louis. The position taken by these two great daily papers shows that the so-called business ideas do not blunt the consciences of the better class of newspaper editors. These men are setting aside valuable advertising contracts for the public good. We feel encouraged by these manifestations of higher business and civic ideals, and we should in turn express our appreciation of the good these papers can do and are doing.

“The Des Moines Capital does not accept the following classes of advertising. There are a few cases of unexpired contracts in which the advertising will be excluded at expiration:

1. Beer, whiskey, or any kind of intoxicating liquors, or so-called tonics, in which alcohol is the chief ingredient. (a). Of men's and women's diseases; (b) Prescription advertising designed to deceive the reader by making the advertising appear to be the advice of the newspaper rather than that of the advertiser. (c). Medicines proposing to cure incurable diseases—consumption, cancer, and a very large number of minor diseases; (d) Medicines or systems proposing to create beauty, reduce fat, straighten noses, increase weight, improve the figure, etc.; (e) Medicines proposing to cure piles and kindred diseases; (f) Medical treatments offered free, inviting correspondence between the subscriber and the advertiser; (g) Medicines containing habit-forming drugs; (h) advertisements containing illustrations offensive to good taste.

3. Fortune tellers, palmists, clairvoyants, etc.
4. Piano Puzzle Contest, or so-called fake piano sales.
5. Transient fire and bankrupt sales.
6. Fraudulent and doubtful financial offerings.
7. Attacks of a personal character; in other words, one advertiser is not to assault the methods of another.
8. Loan shark advertising.
9. Copy of advertising doctors.

Many of the above classes of advertising have been excluded from The Capital for several years. Other classes are now being refused, and still others will be excluded at the expiration of contracts.

It is The Capital's intention to carry no advertising that any reader or subscriber could have the slightest objection to on the grounds of deception, dishonesty or fraud.”

“As a member of the ethical fraternity, therefore, you no doubt will be interested to know that The New St. Louis Star has completed a clean-up of quacks in St. Louis which has made history in the short space of ten days.

The newspapers which accepted advertisements of these medical charlatans have discontinued every ad of that nature and seven arrests by state and federal authorities have so impressed the quacks with the sincerity of The New Star's efforts for decency in the practice of medicine that they are taking down signs and preparing to move."

Malpractice Case of Chase vs. Houghton and Condon.

We are pleased to state that the suit of Chase vs. Houghton, Council Bluffs, tried at Avoca, was terminated recently in favor of the defendant. It will be remembered that this was a sponge case. It was alleged that in an operation for appendicitis, a sponge had been carelessly left in the abdomen. At the first trial one of the jurymen was taken sick and it was continued, and at the second trial jury disagreed, and at the third trial the judge directed a verdict for the defendant. The case was a difficult and complicated one and required a high degree of watchfulness. Several times the plaintiff endeavored to bring the case to suit giving us sufficient notice, and now after a most persistent and hotly contested trial, we have to announce to the Society that the case was terminated in favor of Dr. Houghton.

Proposed Membership Requirement in New Constitution of the Pennsylvania State Medical Society.

"Membership shall terminate automatically with each December and the roll of members shall be made up each new year. The secretary of each component county society shall forward to the secretary of this society at the beginning of each calendar year the names of those who have paid their dues for the current year, together with the per capita assessment for such members. The books shall be kept open for three months and former members whose assessment is received by the secretary of this society on or before March 31st, shall be entitled to all the privileges of the society except that he shall not be entitled to any benefit for the Medical Defense Fund from Jan. 1st, up to the date of the receipt by the secretary of the society of his name and assessment."

Operating Rooms.

Dr. Harvey Cushing, surgeon-in-chief of the Peter Brigham Hospital, Boston, stated in a lecture at the Harvard Medical School recently, that the white ceiling, floor and side walls of an operating room, as well as the white uniforms of the attendants, reflected the light, and he explained the effect upon the eyes. Many surgeons, he said, were coming to the belief that the upper section of an operating room should be light, the lower section dark and the supplies gray.

Use of Horseflesh as Food in France.

The extent to which horseflesh is used for human food in continental Europe is hardly realized in America. Report from Paris on May 31 states that there are in France 700 establishments where horses are slaughtered for this purpose. In Paris alone 60,000 horses were thus consumed in the year 1911. The usual retail butcher's price for horse-flesh is three and one-half cents a pound.

Libel Suits Against the Journal of the American Medical Association.

A libel suit for \$100,000, the first of a series of seven or eight similar court actions, was gfiled in the United States District Court at Milwaukee on October 17th, by former Mayor David S. Rose and Miles J. Devine, a Chicago attorney, against the Journal of the American Medical Association. The plaintiff is Dr. Julius J. Meyer, of New York, representative of the Friedmann tuberculosis serum interests in this country, who claims damages for an editorial which appeared in the American Medical Association's Journal on September 13, in which the Friedmann cure was branded as inefficient.

Suit for Malpractice Not Barred by Judgment in Justice Court for Services.

(Barton vs. Southwick (Ill.),

The Supreme Court of Illinois holds that an action for malpractice is not barred by a judgment before a justice of the peace in favor of the physician, in a naction brought by him for the services rendered the patient, when the defense of malpractice is not interposed thereto.

PIONEER HISTORY.

Woodbury, Plymouth, Cherokee, Ida, and Sac Counties.

Prior to 1876.

Medicine in Woodbury and the adjoining counties cannot boast of an eventful history, as but a brief period has elapsed since the settlement of this portion of the State began. The attention of the citizen, including the representatives of the medical profession, has been so largely devoted to the work of developing the country, and advancing their pecuniary interests, that science in most of its departments has been permitted to fall behind. The same is undoubtedly true of the frontier everywhere, since the field of labor in a new country is not calculated to attract the truly scientific physician who loves his profession and makes its upbuilding the work of his life. Hence pioneer physicians are usually composed of two classes, viz. 1st, physicians well qualified who have adopted frontier life for the purpose of speculation, and who practice medicine incidentally. 2nd, physicians so poorly qualified that they cannot maintain

themselves in the face of intelligent competition. Neither of these classes contribute to the fund of scientific knowledge or maintenance of professional honor or dignity. The truth of these statements is attested by the fact that in all this northwestern region of Iowa there are no recorded facts bearing upon the subject of medicine which antedate the year 1870. The first settlement in this section of the State was made in 1848. Sioux City was founded in 1854 by Dr. John K. Cook who still resides here. (1876) The population increased steadily but rather slowly until 1865, since then the growth of the city and country has been rapid.

Medical Society.

The "Sioux City Medical Society" was organized in November 1872 with eight members. At present the membership is eight, one having withdrawn and one new member recently added. The regular meetings were held monthly for a time, but it soon became evident that the monthly meetings were too frequent, and the time of meeting was changed to quarterly. The change proved salutary, as there is a decided improvement in attendance, more interest taken in the proceedings of the society and better preparations on the part of those appointed to read papers or present reports.

J. M. Knott, M. D.

Pioneer Physicians.

Dr. John K. Cook the founder of Sioux City, settled in Woodbury County in 1855 and has held various offices of civil trust in town and county.

Dr. A. M. Hunk, since deceased, came to this county in 1855-or-56, and was prominently identified with the history and development of Sioux City, more especially with municipal and educational interests. He was a Surgeon of Volunteers during the Rebellion.

Dr. Saville came about the same time as Dr. Hunk. He was then a young man just commencing the practice of medicine and afterwards became prominent in his profession, and in positions of civil trust. He was Surgeon of Volunteers during the Rebellion.

Dr. Justus Townsend, a very judicious man in his profession, and of recognized ability, now an honored resident of Springfield, Ill., engaged in practice. Dr. Townsend was Surgeon of Volunteers during the Rebellion.

Dr. F. A. Wilmans, an able practitioner, was another pioneer physician of Woodbury County.

Dr. Wm. R. Smith came to Sioux City in the summer of 1856, has been supervisor of the Board of Enrollment for the 6th Congressional District, receiver of U. S. Land Office for the last ten years, school director of the Independent School District of Sioux City, Surgeon of Volunteers during the Rebellion, and has been Mayor of Sioux City, etc.

Wm. R. Smith, M. D.

Very little endemic influence has been observed in these counties.

Cerebro-spinal meningitis appeared as an epidemic in this locality in a very fatal form in the fall of 1862, and was more or less prevalent for a year or more.

An epidemic of diphtheria occurred in Woodbury County in October 1873 and continued until March 1874. The number of cases has been estimated at four hundred. There were about thirty deaths. At the time it was in progress and during the preceding summer, very extensive excavations of earth were being made in cutting and grading streets, and it has been suggested that this may have stood in a causative relation. The majority of cases were mild in character and so far as we can learn, the fatal cases were due to invasion of the trachea by exudation. There may have been a few however that died from exhaustion due to the invasion of the poison.

Capillary bronchitis was epidemic over a large range of country in the northwest during February, March and April 1874; duration six to twelve days. Several cases were fatal.

Nothing whatever has been done by local authorities to supply any lack of proper legislation on the part of the State with reference to the regulation of the practice of medicine.

The present population of Woodbury County is 9000. The number of physicians is 17 males, of which 13 have diplomas and 4 have no diplomas.

Classification. (Graduates)

| | |
|------------------|----|
| Regulars | 11 |
| Homeopaths | 1 |
| Eclectics | 1 |

Classification. (Non-Graduates.)

| | |
|-------------------|---|
| Regulars | 2 |
| Homeopaths | 1 |
| Nondescript. | 1 |

Plymouth County has a population of 4000. Number of practicing physicians 6. Regulars, all graduates 3.

| | |
|-------------------------------------|---|
| Homeopaths, (not a graduate) | 1 |
| Eclectic, (not a graduate) | 1 |
| Nondescript. (not a graduate) | 1 |

With reference to the counties of Cherokee, Ida, and Sac, we cannot make a satisfactory report in any particular. There are, however, two regular physicians (graduates) in the town of Cherokee, and two irregular, one of whom is homeopathic. As far as can be ascertained, there are no other regular physicians in the counties named, and only three or four irregulars.

J. M. Knott, M. D.

The following statistics have been collected from the 23 counties from which reports have been received.

| | |
|---------------------------------------|---------|
| Population | 448,942 |
| Number of practicing physicians | 598 |
| Males | 581 |
| Females | 17 |
| Graduates | 367 |
| Non-graduates | 231 |
| Regulars | 428 |
| Eclectics | 72 |
| Homeopaths | 60 |
| Electricians | 1 |
| Thompsonians | 3 |
| Spiritualists | 2 |
| Oculists | 2 |
| Nondescript | 34 |

Surgical Operations.

| | | |
|--------------------------------------|----|-------------|
| Amputation of Thigh | 38 | Mortality 7 |
| Amputation of Leg | 38 | Mortality 8 |
| Amputation of Arm | 14 | Mortality 2 |
| Amputation of Forearm | 10 | Mortality 0 |
| Amputation of Shoulder Joint | 6 | Mortality 0 |
| Ovariectomy | 8 | Mortality 3 |
| Herniotomy-inguinal | 13 | Mortality 5 |
| Herniotomy-femoral | 7 | Mortality 1 |
| Lithotomy | 5 | Mortality 1 |
| Fibroid Tumor including Uterus | 1 | Mortality 1 |

Typhoid Cholecystitis.

Under the above title appears a paper in the *British Medical Journal* (Dec. 20, 1913) by Albert E. Morrison, F. R. C. S. Edin.

Morrison calls attention to the fact that during epidemics of typhoid fever so-called relapses occur with abdominal symptoms and prolonged illness, which have been shown to be due to infection of the gall-bladder by the *B. typhosus* even by patients who are not known to be suffering from typhoid fever but from some other ailment not correctly diagnosed. "The chief symptoms are a feeling of malaise and sickness with a slight rise of temperature (99.5 to 101) and occasional attacks of pain accompanied by rigidity of the abdominal muscles, not always localized to any special area in the abdomen. These attacks if severe, recur with regularity every third or fourth day, are accompanied by vomiting and rise in temperature, and are followed as the temperature subsides, by heavy night sweats." Mr. Morrison states he saw many of these cases during the late South African war who had been exposed to typhoid infection. The condition has been diagnosed as gall stones, but on opening the gall bladder no stones were found.

The author of this paper points out that surgery is not called for in these cases of typhoid cholecystitis. "Medical treatment is simple, efficacious, and as a rule I have found it to act speedily. Large doses of sodium salicylate (15 to 30 grains) in an effervescing mixture until its physiological effect is produced, and abundant drinks, quickly cause disappearance of the symptoms, and recurrence is rare. The drug should be continued in smaller doses for a month after convalescence seems to be assured."

BOOK REVIEWS.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia-Medica in the Jefferson Medical College, Philadelphia, Assisted by Leighton F. Appleman, M. D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. No. 4. Volume 15. Lea & Febiger, Philadelphia and New York. \$6.00 per annum.

The first division of the December number of this valuable periodical is devoted to diseases of the digestive tract and allied organs. A rather full abstract of the literature of the chemical tests of stomach contents in gastric ulcer and also of the movements of intestinal juice, the bile and pancreatic fluids into the stomach and the effects of the different conditions influencing digestion brings our knowledge of these interesting subjects up-to-date. The etiology of gastric ulcers; the influences affecting healing; the diagnosis of chronic ulcer of the pylorus; the importance of pain and hypersecretion; the relation of gastric ulcer and cardiospasm and gastritis and tabes dorsalis, from different sources, offer some valuable suggestions.

Under the head of Gastric Ulcer and Carcinoma some conflicting opinions are presented. For instance, "in a study of 1000 cases of cancer, Friedenwald found only 23 per cent presented any history of previous digestive disturbance, and but 7.3 per cent had a definite history of ulcer," as against 71 per cent according to Wilson and MacCarthy from the Mayo clinic. In relation to medical treatment of gastric ulcer, nothing new is offered. The same may be said in relation to the diagnosis and treatment of carcinoma of the stomach, altogether a somewhat extensive abstract of the laboratory tests advocated by many writers.

Under the head of Duodenal Ulcers several writers are quoted in regard to a differential diagnosis between duodenal and gastric ulcers. The most important sign appears to be the time relation of pain after eating. In regard to the diagnosis of ulcer of the duodenum, Allard objects to the teachings of Mayo and Moynihan that very few mistakes should be made in a correct diagnosis; that in Germany only 10 or 15 per cent of cases are accurately diagnosed. No difference of opinion appears that duodenal ulcer is a surgical disease. A careful study is presented on the interesting subject of peristalsis and antiperistalsis of the large intestine and on auto-intoxication.

Diseases of the biliary tracts and of the pancreas come in for consideration. Moynihan sets himself in opposition to the "medical fallacy" of there being many cases of gall stones without symptoms.

There is a review of 20 pages on diseases of the kidneys. The two most important studies are the significance of tube casts and albumen in congestions of the kidneys and the relations of nephritis to high blood pressure and cardiac hypertrophy or cardio-vascular changes.

Under the head of Genito-Urinary Diseases there is an abstract of the methods of treating the ureter in nephrectomy for tuberculosis of the kidney, and nephrectomy and pyelotomy for kidney stones.

An exhaustive abstract on "Shock" by Dr. J. C. Bloodgood is of great value to the surgeon doing accidental surgery and is worthy of careful study. In acute dilation of the stomach Dr. Bloodgood warmly endorses the plan adopted by the Mayo Clinic of employing the stomach tube on the first appearance of the symptoms. Dr. Bloodgood states that he now employs gastric lavage as a routine within six or eight hours. If duodenal contents are found in the lavage it is repeated in eight hours. By the same author is a helpful review of the treatment of accidental wounds.

This number is so full of useful suggestions that we can note only a few of them, and suggest that the general practitioner will find a subscription to *Progressive Medicine* one of the most valuable and most productive additions to his library.

Genito-Urinary Surgery, by the Adjunct Clinical Professor of Genito-Urinary Diseases, Atlantic Medical College; Editor *Journal Record of Medicine*; Urologist to Westley Memorial Hospital; Genito-Urinary Surgeon to Davis-Fisher Sanatorium; Urologist to Hospital for Nervous Diseases, Atlanta. Assisted by Omar F. Elder, M. D. *The Wassermann Reaction* by Edgar Panllin, M. D. Second Revised Edition. 527 pages with 109 illustrations and 5 colored plates. Price \$5.00 net. E. W. Allen & Co., Atlanta, Ga.

To meet the advances in knowledge of genito-urinary diseases, the authors have felt the necessity of revising and in major part rewriting this book, bringing it up-to-date. It is unfortunate that social conditions are such as to need books of this character, but taking things as they are, diseases of the genito-urinary system becomes one among the most of all.

The extreme importance of a pathologic diagnosis and a correct conception of the proper treatment of these diseases has created a place for carefully considered work by men who have unusual opportunities for study and observation.

The practical character of this book appeals to us as well fitted to the needs of the busy general practitioner.

The Diseases of Children. By Henry Enos Tully, M. D., Late Professor of Obstetrics, University of Louisville, Medical Department; Visiting Physician Masonic Widows and Orphans Home, Louisville, Ky.; Ex-Chairman of the Section on Diseases of Children, American Medical Association, etc. With One Hundred and Six Engravings and Three Colored Plates. Second Revised Edition. C. V. Mosby Company, St. Louis. 1913.

The author in his preface to the first edition states that this book has been written, not for the specialist, but with the needs of the general practitioner in view, and the diseases of children have been described as they are seen by the busy practitioner in his daily rounds. In the volume before us it is stated that "The general character of the book has been kept the same." "New food formula have been added."

This is a very full and comprehensive treatise on the diseases of children and is especially valuable to the young practitioner in that it includes laboratory methods of study of cases. The only reference to surgical treatment of diseases of children is in relation to the early diagnosis of such conditions as need surgery. Altogether the book is a valuable addition to the literature of childrens' diseases.—D. S. F.

Practical Sanitation, a handbook for health officer and practitioners of medicine by Dr. Fletcher Gardner, Health Commissioner of Monroe Co., Ind.; and Dr. James P. Simonds, Prof. of Prev. Medicine in the University of Texas, illustrated. C. V. Mosby Co., St. Louis, 1914. Price \$4.00.

This very valuable book is presented as the only one published on this subject. Part one deals with epidemiology, and goes very thoroughly into details of the various infectious and contagious diseases.

Part two takes up general sanitation and deals with organization, record keeping, school and factory inspection, outlines duties of health officers, the management of campaigns for the extermination of rats, flies, bugs, and all vermin known as disease carriers.

Part three deals with laboratory methods. A very readable book, one that should be in the hands of every health officer.

Essentials of Bacteriology. By M. V. Ball, M. D., formerly Instructor in Bacteriology at the Philadelphia Polyclinic. Seventh Edition, revised. Assisted by Paul G. Weston, M. D., Pathologist State Hospital for Insane at Warren, Pa. 12 mo. of 321 pages, with 118 illustrations, some in colors. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$1.00 net.

A very convenient book when one has not time to read the more extensive works, or when one wishes to make a quick review of the subject. A great help to the laboratory worker as it gives the information wanted in concise form and is very complete for so small a volume. The illustrations are excellent.—J. B. H.

Skin and Venereal Diseases, by Dr. Wm. L. Baum. **Miscellaneous Topics** by Dr. Harold N. Moyer. Vol. 9 of the 1913 Series of the Practical Medicine Series, Year Book Publishers, Chicago. Price 1.35.

In the first 150 pages of the book, Dr. Baum gives a very thorough and comprehensive review of the past year's literature in skin and venereal diseases. The various subjects are well arranged for ready reference.

In the second part of the book, Dr. Moyer writes very interestingly on medical history, economies, sociology and eugenics.

Mortality Statistics, 1911. 12th Annual Report, prepared under the supervision of Dr. Cressy L. Wilbur, Bureau of the Census of the Department of Commerce.

Mortality Statistics, 1912. 13th Annual Report, prepared under the direction of Dr. Cressy L. Wilbur, Bureau of the Census of the Department of Commerce.

Bulletin of the State Board of Kentucky. Biennial Report 1910-1911., J. N. McCormack, M. D., Secy, Pres. of the Kentucky State Journal Pub. Co., Frankfort, K.

OBITUARY.

Dr. P. M. Jewell died at his home in Decorah, Iowa, January 8th, 1914, aged 65 years. Dr. Jewell was a graduate of the University of Michigan in the class of 1873. After a little more than six years of practice in Whiteside County, Illinois, the Doctor moved, in 1880 to Ossian, Winnishiek County, Iowa. Whence in 1899, he moved to Decorah, where he continued in practice until the time of his death.

Dr. Jewell took an active interest in public affairs, and filled various positions of trust and responsibility, with great honor and credit to himself, the community in which he lived, and the medical profession which he honored.

In 1875 he was married to Nama Livingston, to this union seven children were born, three of whom with their mother, survive.

Dr. Jewell was a member of the Winnishiek County and the Iowa State Medical Societies, and the American Medical Association.

In 1897 he was appointed a member of the United States Pension Board, a position which he held until his death. He served as Coroner from 1899 to 1903, as Representative in the State Legislature from 1906 to 1910, and as Senator from the Fourth-second District, composed of Winnishiek and Howard Counties from 1910 until his death.

The Western Surgical Association Foreign Tour.

At the St. Louis meeting it was decided to inaugurate a Travel Surgical Trip to Europe, immediately after the American Medical Association meeting at Atlantic City, June 26th.

The cost of the trip would average, including everything, New York City to New York City, about \$10.00 per day.

| | |
|----------------------|-------------|
| Dr. J. F. Percy | } Committee |
| Dr. Allen B. Kanavel | |
| Dr. D. N. Eisendrath | |

Preliminary Announcement of the Program for the 63rd Annual Session of the Iowa State Medical Society to be held at Sioux City, Iowa, May 13, 14, 15, 1914.

| | |
|---|--|
| Section on Medicine..... | Chairman, Dr. J. E. Luckey, Vinton |
| Address in Medicine..... | Some Common Causes of Headache |
| ..... | Dr. Hugh T. Patrick, Chicago |
| Oration on Medicine | Problems of Medical Progress.... |
| ..... | Dr. Walter L. Bierring, Des Moines |
| Rabies in Iowa..... | Dr. Henry Albert, Iowa City |
| Paper | Dr. F. J. Murphy, Sioux City |
| Adolescence; its relation to primary and secondary diseases..... | |
| ..... | Dr. Frank M. Fuller, Keokuk |
| The Treatment of Peptic Ulcer | Dr. John T. Strawn, Des Moines |
| The Early Recognition of Tuberculosis by the general Practitioner.. | |
| ..... | Dr. John H. Peck, Des Moines |
| Spleno-Myelogenous Leukemia | Dr. Vernon L. Treynor, Council Bluffs |
| Myocarditis | Dr. Henry C. Eschbach, Albia |
| Blood Pressure | Dr. Geo. E. Crawford, Cedar Rapids |
| The Relation of Anaphylaxis to General Medicine..... | |
| ..... | Dr. Anthony M. Loes, Dubuque |
| Conservation of the Middle Aged..... | Dr. John F. Herrick, Ottumwa |
| Tonsil and Adenoid Infections | Dr. Harvey B. Gratiot, Dubuque |
| Paper | Dr. Robert J. Nestor, Waterloo |
| Sex Teaching | Dr. Giles C. Moorehead, Ida Grove |
| Colon Bacillus Infection | Dr. Max Emmert, Atlantic |
| Section on Surgery:.... | Chairman, Dr. Joseph W. Harrison, Guthrie Center |
| Address in Surgery | |
| Oration on Surgery | Dr. Donald Macrae, Council Bluffs |
| Sinuses; infection of | Dr. Wilson W. Pearson, Des Moines |
| Brain Abscess; with a report of cases | Dr. Lester C. Kern, Waverly |
| Spinal Deformities; their Etiology and Diagnosis..... | |
| ..... | Dr. Harry N. Bradley, Manchester |
| Shock | Dr. Charles B. Taylor, What Cheer |
| Early Surgical Treatment of Cholelithiasis | |
| ..... | Dr. Jasper L. Augustine, Ladora |
| What the Public should know about Cancer | |
| ..... | Dr. Lawrence W. Littig, Davenport |
| The Diagnosis of Cancer of the Intestinal Tract | |
| ..... | Dr. Wm. Jepson, Sioux City |
| Benign Tumors of the Breast | Dr. Oliver J. Fay, Des Moines |
| Malignant Tumors of the Breast..... | Dr. David C. Brockman, Ottumwa |
| More Care in Diagnosis as a Means of Promoting Better Surgery.... | |
| ..... | Dr. Thomas E. Powers, Clarinda |
| Duties and Responsibilities of the Country Surgeon..... | |
| ..... | Dr. Alfred L. Brooks, Audubon |

Accidental Trauma to the Abdominal Viscera, requiring immediate section (with citation of unusual cases), Dr. Carl E. Conn, Battle Creek
 Post Operative Ileus Dr. James R. Guthrie, Dubuque
 Paper Dr. Wm. R. McGrew, Stuart
 Non Operative Treatment of Fractures of the Femur.....
 Dr. Albert Wm. Sherman, Burlington
 Section on Ophthalmology, Otology and Rhino-Laryngology.....
 Chairman, Dr. John V. Littig, Davenport
 Titles and Authors in this section are announced in this issue on page
 614.

SOCIETY NOTES

The **Page County Medical Society** announces the following for the March 5th meeting held at Clarinda:

Broncho Pneumonia Dr. T. E. Powers, Clarinda
 Discussion Dr. H. W. Scales, Yorktown
 Lobar Pneumonia Dr. W. F. Stotler, Shenandoah
 Discussion Dr. W. C. Johnson, Blanchard
 Pharyngitis, Laryngitis, and Bronchitis.... Dr. R. J. Matthews, Clarinda
 Discussion Dr. F. H. Clark, Clarinda
 Inflammations of the Pleura Dr. J. F. Benning, Shambaugh
 Discussion Dr. C. C. Parriott, Essex
 Business Meeting.

Woodbury County Medical Society on February 13, held a public meeting which Dr. J. N. Warren, Sioux City, gave a 30 minute talk on "What the Public Ought to Know about Preventive Medicine," and Dr. R. E. Conniff talked for one half hour on "What the Public ought to know about the Doctors."

On January 29th, the **Woodbury County Medical Society** had this program:

Injuries of the Abdomen..... Dr. Louis J. Townsend, Sioux City
 Things Pertaining to Public Health.... Dr. Benj. Courshon, Sioux City
 While on February 26th, the program was:
 Importance of Early Diagnosis in Malignancy of the Uterus.....
 Dr. Keefe, Sioux City

The annual meeting of the **Scott County Medical Society** was held at the New Kimball hotel on Tuesday evening, January 6th. Dr. M. L. Harris of Chicago, addressed the Society on Nerve Blocking as a Substitute for General Anesthesia. Officers for 1914 are:

President, Dr. P. A. Bendixen; vice pres., Dr. A. P. Donahoe; secretary, Dr. John V. Littig; treasurer, Dr. T. W. Kemmerer; delegate Dr. W. L. Allen; all of Davenport.

The Program of the **Appanoose County Medical Society** on February 25th, was: The Etiology, Pathology. Symptoms and Diagnosis of Lobar Pneumonia, Dr. W. A. Harris
 The Treatment of Lobar Pneumonia .. Dr. C. S. Hickman, Clinical cases.

Program **Polk County Medical Society** February 24th:
 The Diagnosis and Treatment of Fractures Involving the Joint Dr. A. P. Stoner
 The Indications for the use of the Lane Plate Dr. J. W. Martin

Officers of various County Medical Societies for 1914, not previously reported:

Appanoose County: C. P. Tillmont, Centerville; vice pres., W. W. Syp, Centerville; secretary, W. A. Harris, Centerville; delegate, T. J. Case, Unionville.

Cedar County: president, V. W. Byrnes, Durant; vice pres., W. C. Tilden, Stanwood; secretary-treas., Paul M. Hoffman, Tipton; delegate, Chas. W. Baker, Stanwood; alternate, Richard A. Peters, Tipton.

Cherokee County: president, Edw. Hornibrook; vice pres., Rose A. Russell; secretary-treas., W. A. Howard; delegate, M. N. Voldeng; alternate, Royal L. Cleaves, all of Cherokee.

Chickasaw County: president, Alexander D. McKinley, Lawler; vice pres., Sherwood B. Zoller, Fredericksburg; secretary-treas., Paul E. Gardner, New Hampton; delegate, Edw. N. Johnston, Fredericksburg; alternate, Nicholas Schilling, New Hampton.

Crawford County: president, Patrick J. Brannon, Denison; secretary, Wm. T. Wright, Denison; delegate, L. L. Bond, Denison.

Decatur County: president, Bert L. Eiker, Leon; vice pres., H. M. Hills, Lamoni; secretary-treas., Fred. A. Bowman, Leon; delegate, O. W. Foxworthy, Leon.

Des Moines County: president, Albert C. Moerke, Burlington; vice pres., Roy F. Karney, Burlington; secretary-treas., Ernest A. Hunt, Burlington; delegate, Chas. P. Frantz, Burlington.

Dickinson County: president, Geo. L. Atkins, Superior; secretary-treas., Chas. S. Shultz, Spirit Lake; delegate, John D. Geissinger, Spirit Lake.

Emmet County: president, Maurice E. Wilson, Estherville; vice pres., G. H. West, Armstrong; secretary-treas., Wm. E. Bradley, Estherville; delegate, James B. Knipe, Armstrong; alternate, Edsil W. Bachman, Estherville.

Floyd County: president, Chas. J. O'Keefe, Marble Rock; vice pres., Julius H. Niemack, Charles City; sec-treas., Chas. O. Yenerich, Rockford; delegate, Chas. J. O'Keefe, Marble Rock; alternate, Walter R. McCray, Charles City.

Crawford: president, Dr. P. J. Brannon, Denison; secy-treas., Dr. W. T. Wright, Denison; delegate, Dr. L. L. Bond, Denison.

Dallas-Guthrie: president, Dr. S. P. Free, Perry; vice pres., Dr. C. I. Thomas, Guthrie Center; secy-treas., Dr. Allen Moorman, Redfield; delegate, Dr. F. W. Bush, Bagley; alternate, Dr. W. L. Thompson, Bayard.

Decatur: president, Dr. B. L. Eiker, Leon; vice pres., Dr. H. M. Hills, Lamoni; secy-treas., Dr. F. A. Bowman, Leon; delegate, Dr. O. W. Foxworthy, Leon.

Des Moines: president, Dr. A. C. Moerke, Burlington; vice pres., Dr. R. F. Karney, Burlington; secy-treas., Dr. E. A. Hunt, Burlington; delegate, Dr. C. P. Frantz, Burlington.

Dickinson: president, Dr. G. L. Atkins, Superior; secy-treas., Dr. C. S. Shultz, Spirit Lake; delegate, Dr. J. D. Gessinger, Spirit Lake.

Emmet: president, Dr. M. E. Wilson, Estherville; vice pres., Dr. G. H. West, Armstrong; secy-treas., Dr. W. E. Bradley, Estherville; delegate, Dr. J. B. Knipe, Armstrong; alternate, Dr. E. W. Bachman, Estherville.

Section on Ophthalmology, Otology, and Rhino-Laryngology.

Chairman, Dr. John V. Littig, Davenport, Iowa.

| | |
|--|--|
| Paper | Dr. Louis L. Henninger, Council Bluffs |
| The Eye Ground in Intracranial Disease..... | |
|—..... | Dr. Gordon F. Harkness, Davenport |
| Paper | Dr. Eugene R. Lewis, Dubuque |
| The Sphenoidal Sinus and its Variations | |
| ..... | Dr. Henry J. Prentiss, Iowa City |
| Diseases of the Eye produced by Pathological Conditions of the Teeth | |
| ..... | Dr. Frederick E. Franchere, Sioux City |
| Paper | Dr. Thomas U. McManus, Waterloo |
| Address: Tuberculosis of the Ear | Dr. Robert Levy, Denver |

My Dear Dr. Boice:—

I respectfully request that you publish again in the Journal of this month, the invitation to attend the lecture of Dr. Joseph C. Bloodgood of Baltimore to be given before the Des Moines Pathological Society on the evening of Saturday, March 21st. Subject; The Difficulties in the Microscopic Diagnosis of the Early Stages of Carcinoma and Sarcoma, illustrated with lantern slides. Dinner at 6:30. Lecture at 8. Plates to non-members \$1.25.

Very truly yours,

Thos. F. Duhigg, President.

Arrangements are being rapidly completed for the entertainment of the State Society in Sioux City in May. The preliminary program as presented in this issue promises a most valuable meeting. The Woodbury County Society is making ample preparations for the entertainment for the visitors. Sioux City is one of the most progressive of Iowa cities and the meeting there will be productive of much good. The April Journal will contain the official complete program, together with some data concerning Sioux City, hotels, railroad service, meeting places, etc. Prepare to attend this meeting, it will be well worth your while.

Have you paid your dues for 1914? The reports in so far indicate that the collection of dues Jan. 1, is the rational method. The local county secretaries has done faithful work and the society is gradually increasing its membership. Concerted action of all those who in any way contribute to the society activity is being productive of much good. If those who as yet are delinquent in 1914 dues, will promptly attend to this duty, the report made at the Sioux City meeting will be a most excellent one.

The spring meeting of the Medical Society of the Missouri Valley will be held in Lincoln, Neb., on Thursday and Friday, March 26 and 27, under the presidency of Dr. Flavel B. Tiffany of Kansas City.

The Committee of Arrangements consists of Drs. A. I. McKinnon, R. B. Adams and R. L. Smith, and a cordial invitation is extended to the profession of nearby states to attend and take part in the deliberations of the society.



LEE WALLACE DEAN, M. D.
Iowa City
President Iowa State Medical Society
1914.

OFFICERS

Iowa State Medical Society

1913-1914

President—Lee Wallace Dean, Iowa City.

2nd District—L. W. Dean, Iowa City.

Second Vice President—Smith A. Spilman, Ottumwa.

Secretary—J. W. Osborn, Des Moines.

Treasurer—W. B. Small, Waterloo.

Editor—D. S. Fairchild, Clinton.

COUNCILORS.

1st District—C. A. Boice, Washington.

2nd District—D. N. Loose, Maquoketa.

3rd District—E. E. Dunkelberg, Waterloo.

4th District—Ira K. Gardner*, New Hampton.

5th District—G. E. Crawford, Cedar Rapids.

6th District—H. C. Eschbach, Albia.

7th District—J. W. Cokenower, Des Moines.

8th District—T. M. Throckmorton, Chariton.

9th District—A. L. Brooks, Audubon.

10th District—M. J. Kenefick, Algona.

11th District—G. C. Moorhead, Ida Grove.

COMMITTEES.

Medico-Legal.

D. S. Fairchild, 1915, . . . Clinton

A. L. Wright*, 1914, . . . Carroll

L. W. Littig, 1916, . . . Davenport

Delegates.

L. W. Littig, 1914, . . . Davenport

M. N. Voldeng, 1914, . . . Cherokee

J. C. Rockafellow, 1915, Des Moines

Alternates.

W. L. Bierring, 1914, . Des Moines

D. H. Bowen, 1914, . . . Waukon

C. S. James, 1915, . . . Centerville

Trustees.

G. N. Ryan, 1916, . . . Des Moines

D. H. Bowen, 1915, . . . Waukon

Thomas E. Powers, 1914, Clarinda

Public Health Education.

M. N. Voldeng Cherokee

Jeanette F. Throckmorton, Chariton

Henry Albert Iowa City

Lenna L. Meanes. Des Moines

Paul E. Gardner. New Hampton

Library.

W. W. Pearson. Des Moines

J. W. Harrison. Guthrie Center

H. C. Eschbach Albia

Constitution and By-Laws.

Max Emmert. Atlantic

E. Hornibrook. Cherokee

Lewis Schooler Des Moines

Publication.

J. W. Osborn. Des Moines

M. J. Kenefick. Algona

W. L. Bierring Des Moines

Finance.

A. P. Johnson Sigourney

Max Witte Clarinda

W. W. Pearson Des Moines

Scientific Work.

L. W. Dean Iowa City

W. B. Small. Waterloo

J. W. Osborn. Des Moines

Public Policy and Legislation.

T. F. Duhigg. Des Moines

W. Woodbridge. Central City

F. C. Mehler. New London

The President and The Secretary

Medical Education.

L. W. Littig Davenport

F. W. Dean Council Bluffs

T. U. McManus Waterloo

H. J. Prentiss. Iowa City

Max Emmert Atlantic

Necrology.

The Council.

Arrangements.

L. W. Dean. Iowa City

W. B. Small. Waterloo

P. B. McLaughlin. Sioux City

Wm. Jepson. Sioux City

J. W. Osborn. Des Moines

*Deceased.

THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

Entered at the Post Office Washington, Iowa, as Second Class Matter

EDITOR

D. S. FAIRCHILD, M. D. Clinton

ASSISTANT EDITOR AND ADVERTISING MANAGER

C. A. BOICE, M. D. Washington

ASSISTANT EDITOR AND SECRETARY

J. W. OSBORN, M. D. Des Moines

Subscription, \$2.00 per year in advance.

Vol. 3

Clinton, Iowa, April 15, 1914

No. 10

IOWA STATE MEDICAL SOCIETY.

Sixty-Third Annual Session, Sioux City, Iowa.

May Thirteenth, Fourteenth, Fifteenth, 1914.

HEADQUARTERS.

THE MARTIN.

The general sessions will be held in the Assembly Hall of "The Martin."

The House of Delegates will meet at "The West," (one block east and one block south of "The Martin") except that the first session of the House of Delegates will be held in the Assembly room of "The Martin" immediately after the adjournment of the Wednesday evening meeting of the general session.

The section on Ophthalmology, Otology, Rhinology and Laryngology will meet at "The West."

The Registration Bureau will be at "The West."

Dr. Henry Albert's Model Laboratory for the general Practitioner will be at "The West."

The Commercial Exhibits will be at "The West."

P R O G R A M.

First Day, Wednesday, May Thirteenth, 1914.

9:00 A. M.

1. Call to order by President, L. W. Dean, Iowa City.
2. Invocation, Rev. Wallace M. Short, Sioux City.
3. Address of Welcome, Dr. Van Buren Knott, Sioux City.
4. Response, Dr. Edward Hornibrook, Cherokee.

Rules For Papers: No paper before the Society shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes nor more than once on the same subject. This does not apply to the Addresses and Orations.

All papers read before the Society shall be its property. Each paper shall be deposited with the Secretary when read, and if this is not done, it shall not be published.

On arising to discuss a paper, the speaker will please announce his name plainly for the benefit of the stenographer.

PLEASE REMEMBER TO REGISTER. The Registration Bureau will be at "The West."

S C I E N T I F I C P R O G R A M.

Medical and Surgical Sections.

Section on Medicine—Chairman, J. E. Luckey, Vinton.

Section on Surgery—Chairman, J. W. Harrison, Guthrie Center.

Wednesday, May Thirteenth, 1914.

1. Tuberculosis; Something of the Present Situation and Needs in Iowa.....H. V. Scarborough.
 2. The Early Recognition of Tuberculosis by the General PractitionerJ. H. Peck, Des Moines
 3. The Non-operative Treatment of the Fractures of the Femur A. W. Sherman, Burlington
 4. Spinal Deformities; their Etiology and Diagnosis.....
..... H. M. Bradley, Manchester.
 5. The President's Address.....L. W. Dean, Iowa City.
-

Wednesday, May Thirteenth, 1:30 P. M.

6. Adolescence: Its Relation to Primary and Secondary Disease.....Frank M. Fuller, Keokuk.
7. More care in Diagnosis as a Means of Promoting Better Surgery.....T. E. Powers, Clarinda.

8. Address of the Chairman of the Section on Medicine....
.....J. E. Luckey, Vinton.
9. Accidental Trauma to the Abdominal Viscera, requiring
immediate section. (With Citation of unusual cases).....
..... Carl E. Conn, Battle Creek.
10. Brain Abscess; with report of case.....L. C. Kern, Waverly.
11. Address of the Chairman of the Section on Surgery.....
.....J. W. Harrison, Guthrie Center.
12. The Relation of Anaphylaxis to General Medicine.....
.....A. M. Loes, Dubuque.

Wednesday, May Thirteenth, 7:30 P. M.

13. Tonsil and Adenoid Infections: especially their relations
to General Systemic Infections.....H. B. Gratiot, Dubuque.
14. Address on Ophthalmology, Otology, and Laryngology; the
Significance of Laryngeal Manifestations during the course
of Pulmonary Tuberculosis, based upon the study of five
hundred cases.).....Robert Levy, Denver, Colorado.
15. Sinuses Infections: with especial reference to their caus-
ation of general infections.....W. W. Pearson, Des Moines.
16. The Mouth as a Source of Systemic Infection.....
.....Frank T. Breene, Iowa City.

Thursday, May Fourteenth, 9 A. M.

17. Surgical Treatment of Uterine Displacement.....
.....W. R. McGrew, Stuart.
18. Post Operative Ileus.....J. R. Guthrie, Dubuque.
19. Address on Surgery; Borderland cases and Team Work in
Surgery.....Arthur D. Bevan, Chicago, Ill.
20. The Diagnosis of Cancer of the Intestinal Tract.....
.....Wm. Jepson, Sioux City.
21. Shock.....Chas. B. Taylor, What Cheer.
22. Cholelithiasis, as is Appendicitis, should be treated surgi-
cally as early as a diagnosis can be established.....
.....J. L. Augustine, Ladora.
23. Duties and Responsibilities of the Country Surgeon.....
.....A. L. Brooks, Audubon.

Thursday, May Fourteenth, 1:30 P. M.

24. Blood Pressure, how to take it and what it signifies.....
.....Geo. E. Crawford, Cedar Rapids.

25. Paper, title unannounced.....F. J. Murphy, Sioux City.
 26. Rabies in Iowa.....Henry Albert, Iowa City.
 27. Address on Medicine, Remarks on Some Ordinary Head-
aches..... Hugh T. Patrick, Chicago, Ill.
 28. Myocarditis.....H. C. Eschbach, Albia.
 29. Colon Bacillus Infections.....Max Emmert, Atlantic.
-

Friday, May Fifteenth, 9:00 A. M.

30. What the Public should know about Cancer.....
.....L. W. Littig, Davenport.
 31. Oration on Medicine; Problems of Medical Prognosis.....
.....Walter L. Bierring, Des Moines.
 32. Benign Tumors of the Breast.....Oliver J. Fay, Des Moines.
 33. Malignant Tumors of the Breast. D. C. Brockman, Ottumwa.
 34. Oration on Surgery.....Donald Macrae, Council Bluffs.
 35. Conservation of the Middle Aged....J. F. Herrick, Ottumwa.
 36. The Treatment of Peptic Ulcer.....J. T. Strawn, Des Moines.
-

Thursday, May Fourteenth, 1914; 10 A. M.

Section on Ophthalmology, Otology, and Rhino-Laryngol-
ogy.....Chairman, Dr. John V. Littig, Davenport.

1. Address.....Robert Levy, Denver, Colorado.
2. The Sphenoidal Sinus and its Variations.....
.....Henry J. Prentiss, Iowa City.
3. The Conservation Idea in Nasal Surgery.....
.....L. L. Henninger, Council Bluffs.
4. The Conservation of Hearing.....T. U. McManus, Waterloo.
5. The Eye Ground in Intracranial Disease.....
.....G. F. Harkness, Davenport.
6. Diseases of the Eye Produced by Pathological Conditions
of the Teeth.....H. E. Franchere, Sioux City.
7. Diagnosis of Sphenoidal Empyema....W. F. Boiler, Iowa City.
8. Chairman's Address.....John V. Littig, Davenport.

STATE SOCIETY IOWA MEDICAL WOMEN.

Sioux City, May 12, 1914.

MARTIN HOTEL.

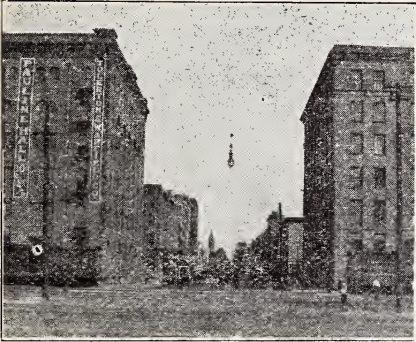
- 9:00 A.M. Business Session.
- 9:30 A.M. Address of Welcome,.....
Miss Margaret Dolliver, President of City Federation.
- 9:50 A.M. Response,.....Dr. Agnes Eichelberger, Sioux City.
- 10:00 A.M. President's Address,....Dr. Florence Sherbon, Colfax.
Delayed Deliveries in Posterior Presentations, treat-
ment,.....Dr. Kate Harpel, Boone.
Laboratory Examinations for the General Practi-
tioner,.....Dr. Mildred Scheetz, Iowa City.
The Year's Progress in Medicine,.....
.....Dr. Margaret Armstrong, Des Moines.
- 1:30 P.M.
Address—Women Suffrage in Illinois.
.....Dr. Rosa Wistein, Chicago.
A review of five years Surgery and Anesthesia...
.....Dr. Grace Frith Jerger, Waterloo.
A study of the diagnosis of Gall Stones and other
upper Abdominal Conditions,.....
.....Dr. Clara B. Whitmore, Sioux City.
Intestinal Diseases in Children and their Treatment,
.....Dr. Georgia Stewart, Des Moines.
The relation of the general practitioner to Nervous
and Mental Diseases,.....
.....Dr. Cora Murdock, Independence.
- 6 to 8 P. M., Banquet.
- Introductory Speech....Dr. Florence Sherbon, Colfax.
Report—by Chairman of Public Health Education
Committee of A. M. A.,.....
.....Dr. Lenna Meanes, Des Moines.
Talk—The Iowa Baby and his future,.....
.....Dr. Margaret Clark, Waterloo.
Report—The Sioux City Survey,.....
.....Mrs. T. C. Stephens, Sioux City.
Address —Sex Hygiene,....Dr. Rosa Wistein, Chicago.
Address—Infant Mortality,
.....Dr. Charles Woods, Iowa City.

SIOUX CITY

P. B. McLAUGHLIN, M. D.

The members of the Iowa State Medical Society will see Sioux City in her "best dress" when they go to attend the annual convention next May.

No city in Iowa is ever fairer than in May and Sioux City, with its superb boat clubs, its incomparably beautiful Big Sioux river, its parks, and its spacious lawns is particularly pleasing at that season.



A View in Nebraska Street

Iowa city whose prosperity is not largely dependent upon state patronage.

Emerging from a series of misfortunes, Sioux City has come into a realization of the fondest dreams of its earliest "boosters;" has had recognition of its title as "the gateway to the land of promises fulfilled," has developed character, evidenced by churches, schools, colleges and libraries; has established itself as the sixth packing center and live stock market of the world; is placed first among the industrial centers of Iowa by the federal census of 1910; and, as above stated, stands first as a jobbing center, second in population, in bank clearings and in postoffice receipts.



Big Sioux River, Opposite Stone Park

Second in population.

Second in Bank clearings.

First as a live stock market.

First as a packing center.

First as a jobbing center.

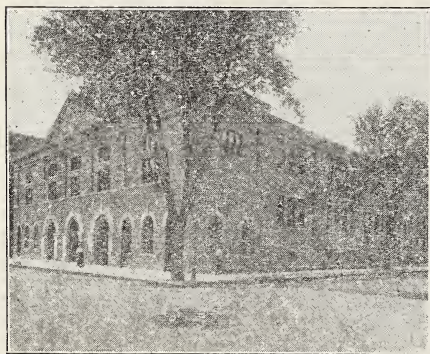
First in value of manufactured products.

Sioux City occupies a most unique position among the cities of Iowa, in that its location at the corner of the four states, Iowa, Nebraska, South Dakota and Minnesota, makes it the one

Measured even by the history of the West, Sioux City is just reaching its maturity. In the latter days of the Civil War Sioux City was a mere hamlet, yet important as a base of supplies for the troops engaged in the memorable Indian Campaign in the Dakotas. In the early seventies it was still only a "trading post," a point from which was transported by wagon train the machinery employed

and the supplies consumed in the "rush" to the gold fields of the Black Hills, and from which boats steamed up and down a mile-wide river, carrying provisions, lumber and agricultural implements, often paid for in furs and other produce of virgin forest, stream and prairie.

The first railroad to reach Sioux City was the Sioux City and Pacific, built in 1868; and one is now constrained to smile at the report of the engineers, who did not recommend an extension to the west on account of the "mountains" along the westernly edge of the broad Missouri valley, which said "mountains" are today covered with corn, wheat and alfalfa and traversed by half a dozen lines of railway.



The Auditorium, Seating 3,000

Now center here four other great railroad lines, the six owning millions of dollars' worth of most valuable property and giving employment to approximately 3,000 men, the majority of whom are heads of families.

Statistics are generally dry reading, but only in figures can the development of Sioux City's principal industry—meat packing—be shown, figures that cannot be understood except by

those who appreciate the wonderful development of the vast territory for which Sioux City is, and always will be, the principal market place—a territory of incomparable agricultural resources.

The Sioux City live stock market was established in 1888, during which year the total receipts of cattle, hogs and sheep was 491,301 head.

In 1913, with the supply of cattle at the lowest point for a quarter of a century, the receipts of the Sioux City market were 404,672 head of cattle, 26,096 head of calves, 1,697,788 head of hogs, and 206,517 head of sheep, a total of 2,335,073 head, the large proportion of which were slaughtered and packed in local packing houses. In addition to these live stock receipts there were handled through the yards 9,948 head of horses in 1913.

The most conservative estimates place the present population of Sioux City at 60,000.

In ten years the city's bank clearings have increased from \$68,063,249 to \$176,000,000; its postoffice receipts from \$120,521 to \$347,965; its bank deposits from two to twenty millions of dollars.

Sioux City has a splendid public school system, employing 261 regular teachers, with fine domestic science and manual training departments, open also to the students of five parochial schools. Total enrollment of public school pupils 8,600. It is also the seat

of Morningside College (Methodist) and Trinity College (Franciscan).

These with a public library, housed in a new \$100,000 building, with three branches and 30,000 volumes, and a liberally maintained Jewish library, evidence the intellectual progress of the people.

Fifty-one spires denote the places where men and women of every creed gather to worship, Sioux City taking pride in the fact that it is a See city of the Catholic church.

It's public and religious institutions include a \$150,000 Y. M. C. A., a Y. W. C. A. with 1,000 members, a Scandinavian Y. W. C. A., six hospitals, a Florence Crittenton Home, Boys and Girls Home,



Martin Hotel, Convention Headquarters

Catholic Orphanage, Home of the Good Shepherd, Helping Hand Mission and Wall Street Mission.

Its social organizations are housed in many beautiful club buildings, including the Hawkeye Club and Elk's Club, the Country Club and four magnificent boat clubs at Riverside park, on the Big

Sioux, Council Oak, Riverside, Sioux City and Shoreacre, than any of which there is nothing finer in the Middle West.



West Hotel

It goes without saying that the reputation for hospitality will be more than maintained in the entertainment of the Iowa Medical Society. The local members of the profession will have the enthusiastic support of the Commercial Club, with its 1200 members, in making the stay of

the visitors so pleasant that they will want to come again.

To those members of the Society who are "addicted" to golf, it is suggested that they bring their "sticks", for the beautiful links of the Sioux City Country Club, the Sioux City Boat Club and the Morningside Club will be appealing to all who enjoy the game.

And the local committee wishes to emphasize an invitation to the ladies to attend the convention. Special entertainment, including a reception at the Boat Clubs, matinee at the Orpheum, etc., is being planned, to be under the direction of a committee of Sioux City ladies. It is hoped that a larger number of the members of the fraternity will bring their wives than ever before in the history of the State Society.

The address of welcome will be delivered by Rev. Wallace M. Short, of Sioux City, Ia.

The address of welcome will be delivered by Dr. Van Buren Knott, of Sioux City, Ia.

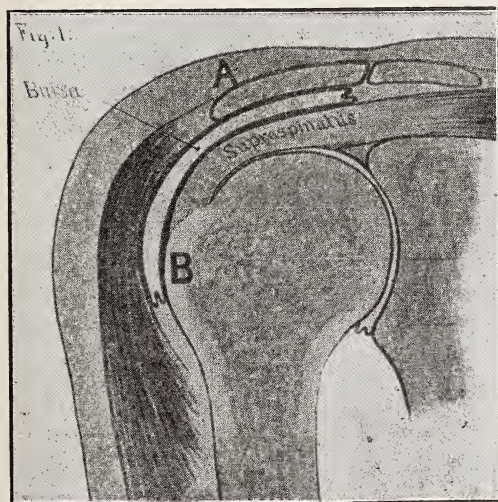
SUBACROMIAL BURSITIS*

L. W. LITTTIG, A. M., M. D., M. R. C. S.,
Davenport, Iowa.

In the discussion of the lesions of the shoulder joint, the various more or less intimately associated bursa received but scant consideration until after the appearance of the first paper on this subject by Codman, in 1906. Codman states that inflammation of the subacromial bursa causes more shoulder joint disability than all other shoulder disorders combined, including fractures and tuberculosis; a statement which a limited personal experience and observation induce me to endorse. Says Codman, "Subacromial bursitis is usually diagnosed as 'brachial neuritis, periarthrititis, muscular rheumatism, circumflex paralysis, contusion of the shoulder, fibrous gout, rheumatism, etc.'" In the past few years quite a number of articles on this subject have appeared, all of them giving due credit to the work of Codman, and quoting more or less freely from his writings. Codman first called this lesion sub-deltoid bursitis, believing that there were usually two bursae, a subdeltoid, and a subacromial, the former lying between the deltoid muscle and the tuberosity of the humerus, and the latter between the tendon of the supraspinatus muscle and the overhanging acromion. In his later paper, Codman considers a single bursa the more usual, and if two be found they are to be regarded as a divided subacromion bursa. This bursa is attached

below to the fibrous expansion of the supraspinatus muscle and the greater tuberosity of the humerus, and above to the under surface of the deltoid muscle, to the overhanging acromion, and to the coraco-acromial ligament. It is free at its periphery, that it may act out its gliding roller-bearing function when the arm is abducted or rotated.

It is readily understood that this bursa is in an exposed position, and that it may be readily in-



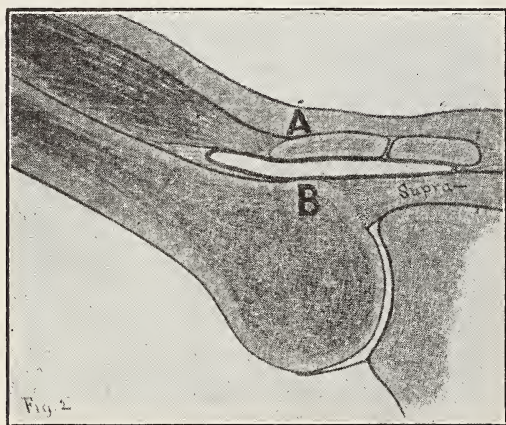
Pressure beyond the acromion will cause pain.

involved in trauma about the shoulder joint, as in a fall or blow. It is also readily seen that a laceration of the tendon of the supraspinatus muscle, near its attachment to the greater tuberosity,

*Read before the Iowa State Medical Society, 1913.

would unavoidably involve the base of the bursa. The constant repetition of the same motion as pitching a baseball, or a lively game of baseball, the pitcher being without proper training, may cause inflammation of the bursa. Any injury of the arm, or any lesion of the breast requiring fixation of the arm may also result in adhesions between the roof and the floor of the bursa. Occasionally the bursa is inflamed in general sepsis; also in gonorrhea, pneumonia, rheumatism, or tuberculosis.

Whatever be the cause of the bursitis, the resulting clinical picture will be best understood by dividing the process into three stages. In the first stage, that of acute inflammation, the rubbing together of the opposed surfaces causes severe pain, and the muscles of the shoulder joint are on the defense as are the abdominal muscles in the early stage of peritonitis, or the chest muscles in pleuritis, and the shoulder joint is locked in spasm whenever motion beyond an arc of ten degrees is attempted. This limited painless motion must not be forgotten, as it differentiates bursitis from a number of other lesions, as arthritis, etc. This muscle spasm and the pain are very marked when the arm is abducted beyond ten degrees, due to the fact that the inflamed and more or less swollen bursa is caught between the tuberosity of the humerus and the acromion as the arm is lifted. It is possible to bring the arm across the front of the chest and to place the hand on the opposite shoulder without pain. In fact, this position affords a sense of comfort. The attempt to



On abduction the bursa slips under the overhanging acromion.

button the collar at the back of the neck, involving as it does extreme outward rotation, is exceedingly painful or impossible. To button the suspenders behind involves extreme internal rotation, and is exceedingly painful or impossible. A patient may be thus disabled for months. Internal and external rotation

does not compromise the bursa between the tuberosity of the humerus and the overhanging coraco-acromial ligament, as does abduction, but rotation involves rather extensive movement between the opposing inflamed floor and the inflamed roof of the bursa. It is difficult or impossible to find a comfortable position in bed. To lie on the involved side or on the opposite side is equally painful, while in the supine position there is a very uncomfortable dragging at the shoulder. Dawbarn calls attention to a sign which he considers

pathognomonic. Finger pressure over the shoulder just external to the acromion is very painful while the arm is hanging at the side, because the inflamed bursa is compressed; if it be possible to rise the arm the bursa slips under the protecting acromion and this painful pressure point disappears. Pressure at other points is free from pain.

When the sharp pain of a pleuritis is remembered, it is easy to understand how the rubbing together of the opposite inflamed surfaces of the bursa causes muscle spasm and fixation, as well as severe pain. As in pleuritis, there may be palpable friction. Nor is it difficult to understand how, as in pleurisy, the opposite inflamed surfaces of the bursa become adherent, and how as the acute inflammatory process subsides, movement is less painful but limited by adhesions. The patient may, in this second stage of adhesions, make valiant attempts to abduct his arm to button his back collar button, or to button his suspenders, but these movements are often entirely impossible, simply because adhesions do not permit the necessary movement between the floor and roof of the bursa. Nor is it difficult to understand how in the course of time these adhesions melt away, as in peritonitis, and how these same movements become possible, the pain and discomfort incident thereto slowly growing less and finally disappearing. Sometimes adhesions are quite painless, but only in comparison to the excruciating pain of the acute stage. "It is," says Codman, "during the stage of adhesions that the influence of the character of the individual in the course of the disease is most marked, because the man who can make use of his tender and atrophic muscles in spite of the soreness has a great advantage over the hypersensitive neurasthenic who has not the courage to stretch his adhesions." If he will persist in stretching his adhesions good results are to be expected.

In the third stage of Codman, the adhesions have given way and the full range of motion has returned, but with pain and discomfort still attending certain movements, as when the arm is abducted and the still enlarged bursa refuses to slip under the acromion. Sometimes the bursa is so large that it locks the arm at this point, and many patients learn that by rotating the humerus outward the arm is raised without difficulty, as by outward rotation the concave surgical neck of the humerus is brought under the acromion. Sometimes these patients think that the weather has some effect on their pet shoulder, and a fact which easily leads the diagnosis of chronic rheumatism.

The diagnosis of subacromial bursitis is not difficult when the lesion is remembered. In the first stage, the persistence of painless motion within an arc of some ten degrees, the muscle spasm when movement is attempted beyond this arc, the severe pain on pressure over the deltoid muscle just external to the acromion and absence of pain on pressure of other points, and the painful muscle defense

on internal and external rotation of the humerus, with the locking of the joint on abduction.

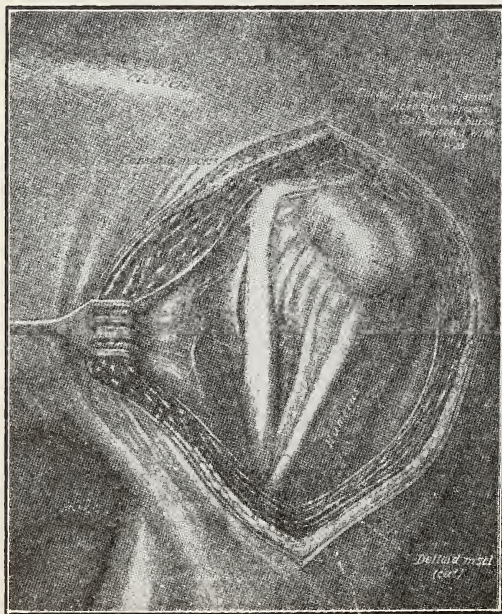
In the second stage when adhesions are present, the diagnosis is equally easy. The more or less painless but impeded motion due to adhesions, especially abduction and internal and external rotation of the humerus, with the painful point of Dawbarn are characteristic. Of course, in this stage the pain is very severe if the adhesions be stretched beyond a certain point. In the third stage the relative freedom of movement with pain when certain movements are attempted, the somewhat impeded rotation of the humerus, and the locking of the arm on abduction. The x-ray may sometimes disclose the inflamed and thickened bursa but is extremely valuable in a negative rather than in a positive way, by demonstrating a joint perfectly normal in every particular.

The prognosis is usually good if the individual have sufficient perseverance to persist in breaking up adhesions.

A few months ago I saw a young man of about thirty who had but a very limited motion in his shoulder joints, he could not do more than bring his hands to the side of his head, and he had been in that condition for several years; an example of what may happen when the patient does not persist in stretching up his adhesions.

In the way of treatment, no attempt should be made to move the joint during the first stage, as such a procedure could only aggravate the condition. In the second stage, when the limitation of movement is due to adhesions, forced movement under chloroform may be tried, with the application of a suitable splint which will

prevent the reformation of adhesions. This splint should be worn constantly for two or three days, and after this time for an hour or two daily for one or two weeks. A good method is to slowly and gradually increase the range of motion by stepping on a block of wood some four or five inches high, then grasping some object just within reach, and then slowly stepping off of the block. A cross bar suspended by chains in a doorway, with one inch links, is an aid, as the the bar can be raised so easily an inch at a time, say an inch every



Bursa injected and dissected.

five or six days. The patient is to step on the block of wood, grasp the bar, and then step to the floor. This procedure will hurt, but it will also stretch adhesions between the roof and the floor of the bursa.

The inflamed bursa has been removed with very favorable results, but some of the best surgeons in America object to this procedure and the objection is easy to understand when the extent of this bursa and its function are considered.

Since completing this paper I have read the article by Flint who recommends aspiration of the bursa when the same is acutely inflamed, and he reports two cases.

In conclusion:

First: Subacromial bursitis is a very common lesion of the shoulder joint.

Second: It is caused by "trauma, fixation, or sepsis".

Third: Limitation of movement beyond an arc of ten degrees due to muscle spasm is characteristic of the first stage.

Fourth: In the second stage motion is limited by adhesions. Abduction, and internal and external rotation are limited or impossible.

Fifth: In the third stage, when adhesions have disappeared, or have been sufficiently stretched, there is still some tenderness on extreme internal and external rotation, and the arm may be locked in abduction when the bursa is caught between the tuberosity of the humerus and the overhanging acromion.

Sixth: Treatment; in the first stage, rest; in the second stage, persistent but mild stretching of the adhesions; in the third stage, patience, or guarded surgical intervention.

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VAGOTONY*

N. SHILLING, M. D., New Hampton.

The term neurosis is a negative one. In a general way it implies that the symptoms observed in a given case can not be explained on the anatomical basis. Often it is more an admission of diagnostic helplessness, than it is the expression of a clear cut conception of a distinct clinical entity. So the statement may be accepted without much qualification that the more discerning the diagnostician, the fewer will be the occasions, when, without reservation, he will be content to make this diagnosis. And it must have occurred to more than one thoughtful practitioner that a more rigid differentiation of this class of cases would be a consummation devoutly to be wished. But serious attempts in this direction have been few.

Neuhof has lately emphasized this point. Among other things he says: "The rôle that nerve irritations and abnormal nerve impulses play in the production of reflex symptoms, and the significance of such impulses in the elucidation of symptom complexes has not received the attention its importance warrants." He directs especial attention to both excitator and inhibitory disturbances of vagus impulses.

Van Noorden gives an account of a number of cases exhibiting symptoms sufficiently characteristic to justify the coining of a new clinical word. He refers to them as **vago neuroses**, and as the name implies, he includes under this designation a group of symptoms resulting from irritations of the vagus nerve.

Just recently, the same author has endeavored to show that there exists a relation of cause and effect between the absorption of poisons from the intestinal tract and irritations in the vagus area.

Vagal attacks believed to be epileptic in their nature, have been

*Read before the Iowa State Medical Society, 1913.

described by Gowers. Years ago, Meltzer recognized the importance of inhibition, or vagus excitation, in the production of clinical pictures more or less distinct and characteristic.

Cardiospasm, emotional icterus and even some phases of biliary colic, myxedema and Graves' disease, he ascribed to disturbances of the normal equilibrium between excitation and inhibition.

However, the most substantial addition to our knowledge of this subject appeared in 1910, when Eppinger and Hess issued their scholarly monograph, entitled "Vagotony". Incidentally, it may be remarked that it will require no special advertising propaganda to secure its recognition as a notable contribution to scientific medicine. While these investigators do not presume to have solved the problem of the neuroses, they contend that inasmuch as organic diseases of the cerebrospinal nervous system have been analyzed by the aid of anatomical studies and physiological experiments, it should be possible by the employment of similar means, to interpret, anatomically and physiologically, the symptoms of diseases of those nerves which supply more especially the internal organs.

They insist too, that before real progress in pathology is possible, exact and fundamental physiological data must be available. Accordingly, they have prefaced the report of their clinical studies by a review of anatomy and physiological chemistry.

In contradistinction to the animal nervous system, which supplies the sense organs and voluntary muscles, the vegetative system includes nerve fibers which convey impulses to involuntary muscles, secretory glands, blood vessels and to the skin.

The vegetative system may be subdivided, anatomically and functionally, into the sympathetic and the autonomous or the system of the enlarged vagus. The latter consists of cranial, bulbar and sacral divisions. The sacral segment is practically identical with the pelvic nerve and supplies the descending colon, the sigmoid flexure and the genitourinary apparatus. Certain parts of the eye are reached by the cranial portion while some filaments of bulbar origin, extend to the glands and blood vessels of the head.

But the largest and most important branch of the autonomous system is the vagus or pneumogastric nerve. It innervates the heart, the bronchi, esophagus, stomach, intestines and the pancreas. It is apparent, that with few exceptions, all vegetative organs receive impulses from both the sympathetic and the autonomous nervous systems. Furthermore, electrical exploration has shown that there exists between these two systems a distinct functional antagonism.

It is true that in their course to various organs the sympathetic and autonomous nerve filaments become so intimately intermingled that their anatomical identification is impossible and their physiological examination by the aid of electrical stimulation is very difficult.

But we have in certain pharmaceutical agents, a means to prove the functional antagonism existing between sympathetic and autonomous nerve fibers.

When adrenalin is administered it influences exclusively the sympathetic system. Its action corresponds exactly with the physiological effect produced by electrical excitation of sympathetic nerve fibers. Atropine, pilocarpine, physostigmine and muscarine have, on the contrary, an elective action on the autonomous system.

The administration of any one of the three latter substances produces an effect analogous to that obtained by electrical stimulation of autonomous nerve trunks, while the exhibition of atropine has a tendency to diminish the excitability of the vagus nerve.

In the healthy organism sympathetic and autonomous innervation balance one another and it is through this physiological equilibrium that the normal tone of nonstriated, or involuntary muscles is maintained. This muscular tone, however, varies not only within physiological limits, but a condition of hypersusceptibility in one or the other equalizing system may supervene and result in manifestations decidedly pathological, and in many instances distinctly characteristic.

It is an old observation that certain individuals are particularly sensitive to the action of atropine. The same may be said of pilocarpine and other vagotropic drugs. Similar individual peculiarities are observed in regard to the action of adrenalin. Bearing in mind, that in the former cases we have to do with poisons that have an elective affinity for the autonomous system and that in the latter instance the sympathetic system is influenced exclusively; it is only reasonable to conclude that these pharmacodynamic eccentricities depend on variations in the susceptibility of the respective nerve elements. Moreover, Eppinger and Hess make the statement that individuals who react strongly to adrenalin are little affected by ordinary doses of pilocarpine and inversely; that subjects in whom minimum doses of the latter alkaloid produce a marked effect will remain refractive to therapeutic doses of adrenalin. An energetic reaction to pilocarpine on the one hand and to adrenalin on the other, is never observed in the same patient at the same time.

The question naturally arises, whether individuals who may be distinguished from one another, by means of this pharmacodynamic reaction do not possess clinical features sufficiently characteristic to enable the practitioner to differentiate those who react to pilocarpine from those who react to adrenalin. Basing their conclusions, not only on numerous experimental data, but especially on evidence gathered at the bedside, Eppinger and Hess answer this question in the affirmative. In the monograph mentioned they have described a particular constitutional anomaly characterized by hypertonicity in the entire vagus area.

Primarily, the condition is a latent one. But when an autonomous nerve apparatus, already in a state of hypertension, is still further irritated it is plain that morbid phenomena will ensue. And it matters little whether the irritant is a vagotropic drug or a retention toxin the intensity of the reaction will correspond, not only to the amount of poison administered, or retained, but it will depend also on the degree of susceptibility existing in the autonomous nervous system at the time.

Accordingly, the authors describe a vagotonic predisposition. These patients, both men and women, are usually young, or of middle age and give one the impression that they are nervous. They are hasty and agitated in their movements and complain of vague gastro-intestinal symptoms or express the fear that they have heart disease. They blush or become pale with equal suddenness and facility. The long tapering vagotonic hand is characteristic. It is cyanotic, moist and cold. On pressure the cyanosis readily disappears.

A tendency to exaggerated general or local perspiration is also typical of individuals predisposed to vagotony. The palpebral fissure is unusually wide and the large beautiful eyes of these patients suggest the possibility of an impending Basedow's disease. Their nutrition is deficient and on general examination, one will often discover evidences of a former scrofulosis. They are subject to acne, comedones and seborrhea. The skin is always moist. It is never dry and scaly.

These people are often myopic and they frequently exhibit slight degrees of convergent strabismus. Möbius' sign, or inability to keep the eyeballs converged, so often observed in exophthalmic goitre, is never seen in the vagotonic. Not infrequently, however, Graefe's sign can be plainly demonstrated. A mild degree of salivation is often a troublesome symptom. The tongue is thick, moist and often fissured. At its base and along its borders, it presents follicles greatly enlarged. The vault of the palate is high and narrow. The uvula is large and drawn to one side.

Nearly always the tonsils project boldly beyond the margin of the pillars and sometimes they almost meet in the median line. The white concretions and the numerous jagged scars on their surface disclose a tendency to frequent attacks of angina.

The pharynx is red, its surface appears granular and is covered with mucus. Very often the pharyngeal tonsil is much hypertrophied, and enveloped in fetid, purulent exudate. These people are mouth breathers and are subject to frequent attacks of coryza. But a phenomenon that is almost pathognomonic of this condition is a great diminution in the sensibility of the pharyngeal mucus membrane. A spatula may be passed along the soft palate and moved about on the surface of the pharynx without giving rise to any retching and with a suitable instrument even the superior aperture

of the larynx may be reached without causing the patient much discomfort.

This comparative absence of the pharyngeal reflex certainly forms a striking contrast to the generally increased irritability of these patients. The respiratory movements are superficial and interrupted. The typical vagotonic complains often of a sensation of pressure behind the sternum and he has much to say about a momentary inability to take a deep breath. In this connection it is not without interest to note that in this class of patients the position of the diaphragm is subject to great variations. After several days rest in bed it is not unusual to find that the lower border of the lungs is two intercostal spaces lower than it was before. After simple inspection of the anterior chest wall, a state of cardiac excitability is apparent. It generally yields to the influence of repose and after several hours rest in bed the heart movements may become normal. The heart sounds are often precipitate and not infrequently the second pulmonary sound is accentuated and divided.

Another typical characteristic of persons predisposed to vagotony is a remarkable variation in the frequency of the pulse. Some times it is below sixty. When considered in connection with the general appearance and the animation of the patient, this feature constitutes a singular clinical inconsistency. Again, attacks of greatly increased frequency of the pulse, are observed. At such times the patients generally feel better than they do during the periods of bradycardia. A feeling as if there was a momentary arrest of the heart's action, generally accompanied by a sensation as if a wave were passing along the neck towards the head, are symptoms that for the sake of completeness it is necessary to mention. In other words subjective symptoms as well as clinical findings reveal a decided cardiac irregularity. The slightest exertion may suffice to provoke a fit of tachycardia.

During the different phases of respiration the pulse will vary in frequency. In the beginning of a deep inspiration, it will be increased; at its conclusion the pulse rate will be diminished, while during expiration an acceleration of the pulse will again supervene. A copious repast or even one or two glasses of seltzer water may initiate an attack of arrhythmia.

In many instances radiography will show a narrowness of the aorta. Moreover, a blood examination will reveal a marked degree of anemia.

Physically, these patients are not well adapted to meet the requirements of gestation and labor. Enteroptosis, movable kidney and uterine prolapse are only local manifestations of a general ptosis of the internal organs that occurs even after one or two pregnancies. Symptoms referable to a disturbed digestive function are seldom absent.

A kind of notional difficulty in swallowing, especially a larger

bolus of food, soon after eating, and before the hunger has been appeased, a sense of fullness and distress in the epigastrium, regurgitation of food, pyrosis and gaseous eructations affording an altogether disproportionate amount of relief, are all manifestations more or less typical of vagotony. A tendency to constipation, interrupted without apparent cause, by occasional attacks of diarrhea also belong to the symptom complexes under consideration.

The urine contains much oxalic acid and frequently an abundance of basic phosphates renders it cloudy. Eppinger and Hess have observed that this phosphaturia is almost invariably associated with gastric hyperacidity. They believe therefore, that the latter bears a causal relation to the former. Urination is relatively frequent and sometimes spasmodically interrupted. Often these individuals complain of frequent emissions and not rarely they present other evidences of an exaggerated sexual excitability. Certain nervous stigmata are never absent. The patellar, cremasteric and abdominal reflexes are exaggerated. There is more or less trembling of the eyelids, tongue and fingers. Sometimes Chvostek's sign can be plainly demonstrated. In most cases dermatographism is very marked.

While it may be true that the phenomena so minutely enumerated by the authors mentioned, may appear trivial and irrelevant, and while it is admitted that they are not necessarily symptoms of actual disease, it must be apparent that it is only by means of such a painstaking inquiry that a latent hyperexcitability of the autonomous nervous system can be discovered and so lead eventually to a correct interpretation of clinical manifestations, that otherwise would appear remote and, in all probability would remain obscure.

But there are other signs of vagotony. Compression of the pneumo-gastric trunk, pressure exerted on the eyeball, or even irritation of the nasal mucus membrane by means of ammonia or tobacco smoke will, in some instances cause a distinct diminution in the rate of the pulse.

Instillation of atropine in the eyes produces marked mydriasis and results in accentuated disturbances of accommodation. The instillation of pilocarpine determines a spasm of ciliary muscle.

Another striking feature of the symptom complex under consideration is the enormous degree of gastric hyperacidity. A rectal examination is attended by more or less difficulty on account of the exaggerated tonus of the anal sphincter. A careful examination of the blood will nearly always show a considerable increase in the number of eosinophile cells.

As mentioned above, these individuals respond energetically to minimum doses of pilocarpine and are correspondingly refractive to therapeutic doses of adrenalin. A centigram of the former will provoke perspiration and salivation, while a milligram of the latter will determine neither polyuria nor glycosuria. Moreover, it is a

striking fact that, occasionally, the injection of pilocarpine, will bring about a situation practically identical with conditions that in practice, we have learned to recognize as typical and characteristic clinical pictures.

Cardiospasm, pyloro-spasm, gastric hyperacidity, pseudo angina pectoris, and disturbances of respiration resembling asthma, are some of the symptom complexes that are produced by the administration of pilocarpine.

In view of the foregoing observations, Eppinger and Hess conclude that many diseases, when fully developed, and which are clinically designated as bronchial asthma, cardio or pyloro-spasm, gastro-sucorrhea, angina pectoris vasomotoria, biliary colic and tenesmus are generically identical with conditions brought about by the administration of vagotropic drugs in that they are caused by the presence in the system of noxa that are irritating to the autonomous nervous system and that find in the vagotonic disposition a favorable soil for their activity.

Another observation that tends to confirm the correctness of this view consists in the remarkable curative effects of atropine in precisely the class of cases under consideration. It is well known of course, that this alkaloid has an especial elective affinity for the enlarged vagus nerve area; but it does not stimulate this system as does pilocarpine; on the contrary, it has a decided tendency to paralyze autonomous nerve elements. In the light of these reflections it will not seem so strange that atropine acts almost as a specific in the diseases mentioned. Since the spasm and hypersecretion so characteristic of these conditions depend on hyper-irritability of the very nerve apparatus that atropine has the power to paralyze, it is only in line with rational therapeutics to expect; that after the administration of this remedy in these diseases an amelioration of symptoms will ensue.

Furthermore, it is a matter of daily experience that in the same class of cases adrenalin is of decided curative value. In bronchial asthma, for instance, this active principle is often exhibited with most gratifying results. And there is a good physiological reason for the beneficial influence of adrenalin on a disease that is due presumably to a state of hyperexcitability of the autonomous nervous system.

It may be assumed, however, that the disease in question, depends not only on the degree of tension in the enlarged vagus nerve area, but that it bears also a causal relation to the sympathetic nerve, the physiological antagonist of the vagus system.

At any rate, it seems that so far as the relief of bronchial asthma is concerned it matters little whether we paralyze the vagus by means of atropine or stimulate the sympathetic through the agency of adrenalin. In either case the patient is relieved because

the normal balance between the two functionally antagonistic nervous systems is restored.

Another circumstance that helps to establish the vagotonic theory as to the origin of some of the neuroses, is seen in the observation that manifestations of vagotony, exclusively local, seldom occur.

Signs of latent irritation of the pneumogastric in branches other than the one more directly involved are nearly always in evidence. In bronchial asthma, for instance, we observe not only the spasm and hypersecretion so typical of this disease, but we find associated almost constantly, autographism, excessive perspiration, bradycardia, uncomfortable sensations in the upper abdomen, and on examination of the blood, a marked degree of eosinophilia, all symptoms referable at least in part, to a state of hyper-irritability in the enlarged vagus nerve area.

In what other way would it be possible to explain clinical manifestations so diverse and apparently so remote and unconnected? It is not without interest to note that experimentally in animals, paroxysms resembling asthma may be induced by terminal irritation of vagus nerve filaments and that a latent state of vagotony may be converted into an active one by the administration of a vagotrophic drug, as when in the beginning of tabes a mild crisis is brought on or in an individual subject to asthma an attack is provoked by the injection of pilocarpine.

It is instructive too to know that this alkaloid has the property to increase the percentage of eosinophile cells in the blood and that this eosinophilia can be made to disappear by the administration of atropine or adrenalin.

When we reflect that the autonomous nervous system, through its manifold divisions and intricate ramifications extends to nearly every internal organ, it is plain that the vagotonic predisposition will necessarily exert its own peculiar influence on the evolution of many other diseases. In fact, the symptoms presumably typical of a given clinical picture are sometimes modified and not rarely obliterated altogether by manifestations peculiar to vagotony.

It is in this way that we can explain the impressive clinical fact that pathological changes practically identical will give rise to symptoms of the most varying intensity. So in ulcer of the stomach, for example, we know that the severity of the clinical manifestations does not depend entirely on the size, location and number of the ulcers. In some instances they cause the patient little inconvenience and are surmised only on the finding of occult blood in the stool. It has even happened that a stomach ulcer of considerable proportions has eluded the pursuit of the surgeon until it was accidentally discovered at the autopsy. And it is precisely in these quiescent cases of ulcer that the signs of vagotony are not in evidence while it is an incontestable clinical reality that in vago-

tonic individuals the subjective symptoms of this lesion are invariably accentuated. Obviously, the ulceration forms a point of local irritation which radiates impulses to the hypersusceptible pneumogastric and determines not only the increased tonus, and exaggerated peristalsis of the stomach wall, the intensified nausea, pain and hyperacidity, but it causes also the bradycardia and the spastic constipation so often associated with it.

The circumstance, that these patients nearly always react energetically to the administration of adrenalin and are invariably refractive to the action of pilocarpine, would tend to confirm this view. In this connection it may be worth while to contemplate more deliberately the relation of ulcer and carcinoma. In no less than sixty-five per cent of the cases carcinoma of the stomach develops on the base of an old ulcer; quiescent ulcers are more apt to undergo carcinomatous degeneration than the more active ones; and usually it is at an age when the more violent period of ulcer has long since passed that malignancy supervenes.

With these suggestive clinical details in mind it is certainly pertinent to inquire whether in the etiology of cancer, nervous influences do not play a considerable role. Assuredly, we are justified in concluding that carcinoma of the stomach does not develop until after the vagotonic hyper-irritability has been superseded by a lessened activity in the autonomous nervous system.

Tabes dorsalis is another disease in which its course is essentially modified by vagotomy. Almost exclusively, it is the vagotonic individual who becomes afflicted with tabetic crises. The excessive contraction of the pupil at the beginning of the attack, the gastric hypersecretion associated often with hyperacidity, the exaggerated peristalsis, the perspiration, the laryngeal crises, and the rectal tenesmus, are all manifestations of a state of hyper-irritability in the autonomous nervous system. The fact that in the ultimate evolution of tabes these symptoms are replaced by opposite ones, such as paralysis of the recurrent laryngeal, atony of the stomach and intestine, anacidity, impotence, etc. only serves to prove that excessive over stimulation of a nerve supply is inevitably followed by a paralytic stage more or less complete and permanent.

The relation of tuberculosis to vagotomy needs to be particularly emphasized. The increased reflexes, the tendency to perspiration, the lowered blood pressure, etc., are all vagotonic manifestations. Furthermore, the tuberculous patient is refractive to adrenalin and sensitive to pilocarpine. Eppinger's vagotonic theory certainly merits particular consideration. Obviously, it would be impossible as well as superfluous to enumerate the possible instances of its application at the bed side.

Wherever there is a spasm of an involuntary muscle or an over activity in any glandular organ; wherever there is a hypersensibility in any filament of the enlarged vagus nerve area, continued

and sufficient doses of adrenalin or atropine is the rational therapeutic indication. For, as mentioned above it matters little whether we restore the physiological equilibrium normally existing between the autonomous and sympathetic nervous systems by paralyzing the former by means of atropine or stimulating the latter through the agency of adrenalin.

Let me say in conclusion that vagotomy is a symptom-complex, referable to a state of hyperexcitability in the enlarged vagus nerve area, and that it has been differentiated from that indefinite and bewildering chaos of clinical apparitions usually included under the collective title "neuroses".

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Discussion.

Dr. Ira K. Gardner, New Hampton: I am sorry the time was so short as not to permit the doctor to finish reading his paper. I know personally he has spent many, many hours in preparing this paper. The paper was considerably like the *Journal of the American Association*. About half the writers say, the *Journal* flies over our heads, that we do not understand it.

I have great respect for the vagus system. Most of us have been reading about the authors first quoted, and I think from this time on, we will study the question more.

I wish some of the members would discuss the paper differently from what I have, and bring out some other points. I must say, I have a great respect for the great vagus system, and I think we will be able to draw valuable conclusions from it.

A Member: I want to add a word to what Dr. Gardner has said about the importance of this line of study. Dr. Warren has warned us in regard to the evil lines that may be followed in surgery and the evil lines that may be followed in medicine, if we are not careful.

The study of physiological principles is at the foundation of the practice of medicine; and the more study we give it, the better informed we will be along that line.

Dr. N. Schilling: I thank the members for discussion of this subject, and I hope to be pardoned for bringing it before the convention. It requires a great deal of nerve to attack a subject of this kind. In working along this line, however, I think we will eventually succeed in classifying the subject neurosis. Neurosis means really nothing. It will eventually be regarded as no diagnosis at all.

ATYPICAL PNEUMONIA. *

O. L. CHAFFEE, M. D., Waverly.

The general practitioner is seldom confronted with a condition that permits of easier diagnosis than typical lobar pneumonia. A history of exposure, vomiting, chills, followed by high temperature, rapid respiration, pain in the affected lung which on examination reveals the usual physical findings and we have a picture that scarcely permits of error in diagnosis.

In a vast majority of cases the pneumococcus is the causative organism, liberating its more or less virulent poison, pneumotoxin, and the severity of the infection depends not so much upon the amount of lung tissue involved as upon the virulence of the infecting organisms.

Where the pneumococcus is the chief invader the infection may be very mild and in fact may sometimes only be discovered when examining the sputa for a suspected tubercular infection or chronic bronchitis. A young man, aged twenty-four entered my office one day last February complaining of weakness, and a distressing cough and some pain in the right lung. He had been up and doing some work until the day he came to my office. Examination of the chest revealed a consolidation in the upper part of the right lung. His temperature was 101, pulse 116, respirations 24. I suspected a tubercular infection, applied von Pirquet's test and told him to return next day with a specimen of sputa for analysis. The sputum examination showed pneumococci in abundance and no tubercle bacilli present. I sent the patient to the hospital and the second evening he had a crisis and made a perfect recovery. But it is with these mixed infection cases where we may find various organisms present, most common among them being the bacillus of influenza, the pneumococcus of Friedlander, the streptococcus, or staphylococcus, and the meningococcus which often times obscures our diagnosis.

When we have mixed infection with any of the previously mentioned bacteria we have a resulting bacteremia, toxemia or speticemia, depending upon the organisms present. And when we stop to consider that the bacteria have direct access to the blood readily understand why we have so many complications which are apt to occur, probably the most often met and the most treacherous being pericarditis, meningitis, empyema and nephritis.

The healthy individual invaded by an uncomplicated pneumococcus infection of a comparatively nonvirulent type is able to produce anti-bodies rapidly enough to prevent profound systemic disturbance while the diplococci are speedily destroyed as they will not long endure a temperature of 104 degrees or more.

It is impossible to offer a bacteriological classification of acute

*Read before the Austin Flint-Cedar Valley Society, 1914.

pneumonia because our present knowledge is insufficient and further because the whole subject is complicated by the occurrence of double and mixed infections. So in presenting this subject for your consideration today I shall only discuss a few of the most important and typical forms of infection and complications most often met by the general practitioner, i. e.: 1—grippal pneumonia; 2—cerebral; 3—central; 4—chronic interstitial; 5—empyema; 6—abscess of the lung.

A condition which we have all met many times, particularly in recent years, is that atypical form referred to by some writers as grippal pneumonia, the pneumonia symptoms usually being entirely masked by the usual symptoms of influenza. The type of pneumonia often met with complicating gripe is the so-called wandering pneumonia, where new areas are rapidly involved, resolution usually taking place in the previously infected area and this process continuing until many times practically the entire lung has been affected. In some instances this migrating form is without doubt of erysipelatos origin.

Next let us consider that almost invariably fatal form known as cerebral pneumonia, or pneumonia cerebri. In this condition we have from the very beginning symptoms more nearly simulating meningitis, hence the name. We usually have at first an apex involvement. Repeated convulsions and somnolence mask the manifestations of dyspnea and cough. Of greatest importance in the differential diagnosis between a pneumonia cerebri and a cerebro-spinal or tubercular meningitis is that in a lobar pneumonia we usually have a constantly high temperature, while a continual temperature of 104 degrees or more is strongly opposed to meningitis. The lesion in the lung is usually not recognized in the beginning as the brain symptoms attract our attention to the exclusion of the real focus of infection.

Another atypical form which presents still greater difficulties in diagnosis is a central pneumonia, which is always characterized by the late appearance of the physical signs of hepatization of the lung. The clinical picture is like an ordinary pneumonia, violent fever, cough, hurried respirations, etc., but as a rule several days will elapse before the real nature of the disease and its situation can be learned, the primary focus occurring in the center of the lung and increasing in all directions. This central type of pneumonia is also often associated with epidemic influenza.

Before passing to the discussion of chronic interstitial pneumonia allow me to cite a most unusual case of delayed resolution. The patient was one I saw in consultation with Dr. Kern two years ago. The patient, a previously healthy young man, contracted a pneumonia, which ran a typical course for the first ten days. Then, instead of the expected crisis, he continued to run a temperature of 103 to 104 for 44 days and his temperature did not reach normal for 57

days. The consolidation persisted, but repeated explorations failed to reveal any pus, nor did he respond to any typhoid tests which were tried repeatedly. The fever was constantly high, no chills or sweats, and blood changes were slight. The patient eventually made a perfect recovery.

Chronic lobar interstitial pneumonia pathologically is the organization of the exudate of the lung instead of resolution and absorption, and this organized mass invades and destroys the parenchyma of the lung. Clinically the disease is essentially chronic, characterized by shortness of breath, cough and possibly profuse expectoration of purulent material which collects in the bronchi. This is the type which has often been referred to by the laity as 40-year consumption. In diagnosis it must be differentiated from a similar pathological condition due to infection with the tubercle bacillus and known as fibroid phthisis.

Empyema, while not an atypical form of pneumonia, arrests our attention as a common complication and I mention it partly to substantiate my contention that certain forms of pneumonia are quite contagious. Three years ago I had the unusual experience of having three cases of pneumonia in one family, all young boys, and all complicated by empyema. The older boys, one twelve and one nine years of age, were taken sick within a week's time. Both developed empyema following a typical involvement of the right lung. I resected a rib in each case and free drainage effected a cure in both cases. About three or four weeks later a young boy, aged 5, contracted pneumonia and the involvement was here also confined to the lower part of the right lung. After his primary crisis he manifested symptoms of sepsis and again for the third time in one family I had an empyema to deal with. I resected a portion of the sixth rib and the patient did well for several days when a chill, sudden rise of temperature and pain on the left side led me to discover a new involvement there. It became necessary to drain that side, and while the little fellow improved satisfactorily for a few days with free drainage from both sides the general toxemia was too great and he died from a secondary involvement of the kidneys—nephritis.

Finally, let us briefly consider abscess of the lung, which is, in reality, a secondary infection by one or more of the pyogenic bacteria. The condition usually manifests itself about the time we expect a crisis and occurs often in cases with a generally lowered vitality and low power of resistance. Abscesses of the lung are usually multiple and small in area and it is often impossible to locate the lesion by percussion and auscultation. Where multiple abscesses occur the prognosis is necessarily grave, while a single large abscess is rather less grave, though a complication having a high mortality. Allow me to cite two cases for your consideration.

I was called to attend D. L. in May, 1912. He had had a

slight chill, followed by a temperature of 103, pulse 120, rapid respiration, and an intense pain in the left mid-axillary line. On my next visit, physical examination revealed dullness in the lower right chest, and also a small area in the mid-axillary line on the left side, where his pain had been so intense. During the next two weeks his temperature was ordinarily about 102 to 103 during the 24 hours. The pain in the left side became less intense and his general condition slightly improved. At this time he had repeated slight chills followed by a sudden rise in temperature and profuse sweats. Sputum examination showed a mixed infection of the pneumococcus, Friedlander bacillus and staphylococci. I then made a blood examination which gave a leucocytosis of 18,000 and 89 per cent neutrophils. Thinking I had an empyema to deal with I explored both involved areas in different places but could find no pus. After a few days of continued chills and every evidence of a general septicemia I again explored the chest but with negative results. At this time I asked Dr. Bierring to come up and see the case in consultation. About the time Dr. Bierring arrived there was a sudden change in the patient's condition. He quickly became very cyanotic, respirations more labored, pulse rapid and weak, and in a few hours our patient died, no doubt from the rupture of an abscess into the lung. The other case I wish to briefly describe occurred in my own family and consequently taught me a most impressive lesson. Mrs. Chaffee was taken ill in March with influenza. After a few days she had a slight chill, followed by a constant high temperature, very rapid pulse and a severe cough, accompanied by profuse expectoration. Physical examination revealed rather a small area of dullness in the upper part of the right lung. At the end of ten days, following a preliminary crisis she had repeated slight morning chills, before which her temperature was usually about 96. Following the chill she had a daily elevation of temperature of 103, followed by profuse sweating. The cough was very distressing. Dullness was now confined to a small area in the apex of the right lung. This condition persisted for about two weeks and as her symptoms were decidedly indicative of a tubercular infection. Repeated examinations of the sputa were made at home, specimens were sent to the laboratories at Iowa City and Chicago.

All who examined the specimens reported the same findings—i. e., pneumococci, staphylococci and the Friedlander bacillus. No tubercle bacilli present. After three weeks of suffering the abscess ruptured one morning during a severe coughing spell. The abscess ruptured into the large bronchi and she discharged several ounces of extremely offensive pus. Following that she made a comparatively rapid recovery, and today is enjoying the best health she has ever had.

I will not take more of your time to discuss other of the interesting complications and atypical conditions, nor do I dare, in face

of the conflicting opinions in regard to treatment, uphold or decry any particular system of treatment of pneumonia. While many of our best writers and clinicians claim that pneumonia is a self limited disease demanding little if any treatment, I personally believe in Jacobi's epigrammatic remark—"It takes brains to treat pneumonia."

Forcheimer, in his latest work on Therapeusis of Internal Diseases, says: "Therapeutic nihilists have done an incalculable harm by unjustified pessimism concerning the treatment of pneumonia, and I agree with Dr. Chandler, of Chicago, who says—"I positively assert that any medical man who at this day regards pneumonia as a self limited disease, destined by an all wise providence to run a certain course, acknowledges his incapacity as a therapist. When we come to consider pneumonia as a general systemic infection involving especially the heart, lungs, liver and kidneys, instead of a localized disease, we shall have made a step forward.' "

In closing let me again quote Forcheimer, who says—"No disease demands for its conscientious treatment greater sacrifice from the physician and nurse during a limited period, none greater persistence, none greater judgment. No case is so slight that it may not ultimately offer a grave prognosis, none so grave that it may not yield and finally recover."

INFANT FEEDING. *

M. L. TURNER, M. D., Des Moines.

The subject of infant feeding is one that is very much in the lime light among the pediatricians at the present time. Hardly a journal of pediatrics today but has one or two leading articles on this subject in each issue. Notwithstanding these frequent discussions, there are still many different opinions on the different phases of this subject. There is but one point on which all seem to be perfectly agreed, and that is that mother's milk is the best food for the infant.

When we examine the mortality statistics of children under one year of age it is not surprising that interest is aroused. The reports from some of our larger cities shows the following death rate among children under one year of age:

| | | |
|------------------|-----|-------------------------|
| Detroit | 132 | per one thousand births |
| Cleveland | 131 | per one thousand births |
| Washington | 128 | per one thousand births |
| Buffalo | 127 | per one thousand births |
| Boston | 115 | per one thousand births |
| New York..... | 105 | per one thousand births |
| Cincinnati | 103 | per one thousand blrths |
| St. Louis | 100 | per one thousand births |

*Read before the Polk County Medical Society, November, 1913.

From reports obtained at the Health Department of the state of Iowa we find that in the year 1911 there were in the state of Iowa 2486 deaths among children under one year of age. These do not include the still births. During the same period the deaths among people whose ages range from one to twenty years of age was 2638, making the number of deaths during the first year of life approximately the same as for the next nineteen years of life. We were unable to obtain the statistics which would give the cause of death among these children separate from other deaths. But we do have a classification giving the cause of death peculiar to this age. 570 children, during this period, died of cholera infantum; 171 are reported as dying from convulsions of infancy (which we may assume was largely intestinal diseases), and 537 from inanition, making a total of 1268, or more than half of the whole number died of nutritional disturbances. It is fair to say that many deaths are reported among children dying from pneumonia and other difficulties where the primary cause was nutritional. These figures correspond closely to reports gathered from our large cities where statistics are fairly accurately kept. Reports from some of these cities show that about sixty per cent of children dying under one year of age die from intestinal trouble. It has been demonstrated that the mortality among infants can be reduced 25 to 50 per cent if proper attention be given to the feeding, and a much larger per cent can be saved if we could induce our mothers to nurse their babies.

We are spending thousands of dollars every year trying to make our quarantine laws effective and the deaths from all of the quarantinable diseases during the year 1911, in the state of Iowa, was only 309. The deaths reported from all of the contagious diseases, measles, whooping cough, scarlet fever, diphtheria, and anterior poliomyelitis, are less than one-half the number of babies who die from improper feeding. Why should not the state and city spend some money to aid in lowering this mortality record. If an epidemic of smallpox should appear in Iowa and carry off 1000 of our people we should be appealing to the United States government for aid, yet one thousand babies die among our people every year from causes that are largely preventable, and we say nothing about it. We seem to have become accustomed to it.

The manner in which we will be able to remedy this condition is to start a crusade urging and educating mothers to nurse their babies. If one-half the energy be put forth to encourage the mothers to nurse their babies and teach them how they may be able to do it, that there has been trying to find a suitable food as a substitute for mother's milk, very much could be accomplished towards saving these babies. The importance of breast feeding has always been known, but it does not seem to have been fully appreciated.

Dr. Wm. H. Davis, Vital Statistician of the Health Department of Boston, made an investigation of a large number of babies born

during one year. These cases were taken indiscriminately from the birth records of the city. The statistics show about 68 per cent were breast fed and about 32 bottle fed. His report shows that there were 2248 deaths among children from two weeks to one year of age in Boston during one year; seventy-four per cent of these were bottle fed and twenty-six per cent breast fed, and he arrives at the following conclusion, "that if seventy-four per cent of infant deaths above the age of two weeks are among bottle fed babies, and only thirty-six per cent of babies over two weeks are bottle fed, then of such infants the bottle fed are six times as likely to die as the breast fed." This estimate of deaths among bottle fed babies is much lower than from some other reports. He states that it is "especially in the study of diarrhea and enteritis that the terrible effects of bottle-feeding are revealed. There were in Boston in 1911, in infants between the ages of two weeks and one year, 621 deaths due to this cause, 534 of which were bottle fed and 87 breast fed."

His figures also show that deaths from communicable diseases are much greater among bottle fed babies than among breast fed. In his list there were 20 deaths from diphtheria, all bottle fed but three; 16 deaths from pulmonary tuberculosis, only one breast fed.

During the siege of Paris in 1871 when the milk supply failed, the Parisian women were compelled to nurse their children, and the infant mortality rate fell from 330 to 170 per thousand.

Can more mothers nurse their babies than do already? How many more? There is a wide range of opinions on that subject. Dr. Emmet Holt states that not over 25 per cent of the well-to-do of New York City who had honestly and intelligently attempted to nurse babies had succeeded in doing so, for as long as three months. This is in direct contrast to the report from the maternity department of Professor Pinard in Paris, who found 99 per cent able to nurse their children. Between these two extremes are found many estimates, ranging from 66 to 96 per cent. Dr. Jacobi, the father of pediatrics in this country, recently said that one hundred per cent of our women can be made to nurse their babies, even the "flower and fashion" of the land.

Dr. Herman Swartz of New York found that in a group of 40 mothers who had not previously nursed their babies, that under supervision ten nursed a subsequent baby eight months; nine six months, one five months, four four months, nine three months, and four two months. Dr. Schwarz of Baltimore, found in a study of 1501 mothers, that 96 per cent were able to nurse their babies for one month, 88 per cent three months and 77 per cent six months. When we consider the difference in mortality among children who are breast fed and those who are bottle fed, we should certainly feel encouraged to attempt to teach our mothers to nurse their babies, and insist on their doing it. Some of the causes for mo-

thers not nursing their babies are psychic and economic. The mortal fear mothers have that they will not be able to nurse their babies goes far towards bringing about just such a result. Her neighbors have told her that they were not able to nurse theirs, and she probably will not be able to nurse hers. And then there is the ever present relative and grandmother who is ready to say, upon the least ailment of the child, that she had better put it on the bottle, and being of that type of mother who is ready to please, the baby is put on the bottle. Some women must become the bread winner for the family, and are compelled to wean their babies.

Society does more than its full share towards keeping the mothers from nursing their babies. It is unfortunate that some physicians are too free to give consent to the mother weaning her child on the slightest provocation. I have known physicians to give consent, or even advise mothers to teach their baby to take one feeding from the bottle so that if she desired to go out for the evening, a substitute feeding could be given to the baby while she was away. If our teachings of theology are correct, there are myriads of little white wings in Heaven on account of this fatal error, for unless the breast be stimulated regularly it begins to diminish its flow, and in a short time the baby is fed wholly upon the bottle. It is not necessary for mothers with healthy babies to be handicapped materially in their social duties because of nursing their babies. I believe in the long interval nursing. The breast fed baby will be better off if nursed only every three hours, with one nursing during the night, and I have had experience with a number of babies that nursed only every four hours, and they were as strong and healthy babies as I have ever seen, and much less trouble to the mother.

Dr. Litzenberg of Minneapolis gives a series of 15 cases of premature infants fed at long intervals, most of them four hour feedings, and all did well.

Much careful investigation has been made with the x-ray to determine the length of time necessary for the stomach to empty itself. When breast fed the time is approximately three hours, for bottle fed about one half hour longer. Feeding oftener than this will cause decreased secretion of gastric juices and lead to indigestion.

We are aware that the Utopia of infant feeding is not yet in sight, and we are compelled to find a suitable substitute for mother's milk.

In this country, as in every other country, we use largely some modification of the cow's milk. A chemical analysis of the cow's milk, as compared with the mother's milk, shows it to be a little richer in proteids and not so rich in sugar, and about the same in fats. We might assume that a modification of this milk so that it would nearly approach the mother's milk would be all that is nec-

essary. Such a modification is taken by a certain per cent of the babies who are fed on the bottle, but every child is a law unto itself, and not many can be fed by any fixed rules.

The essentials in bottle feeding are pure milk from a tuberculin tested herd, clean utensils for preparation, and some one to prepare it that knows how to keep it clean while in the process of preparation. We have been fighting a battle royal for pure milk for our babies, but what is the use of clean milk if it is not kept clean. In homes where the mother has not been properly taught how to prepare the feedings for the baby, the following is a fair sample of the program that will be carried out. The milk man will leave the milk at the door about five o'clock in the morning. If the door faces the east the sun will strike it as soon as it comes up, and if in the summer time it is already there when the milk man arrives. The family get up at six or seven. The mother gets breakfast and dresses several children and about eight or nine o'clock the milk is brought in to be prepared for the baby. The temperature has probably risen to 70° or 80° or even 90° if it has been a warm morning, and the sun's rays beating directly on it. The bacterial count has probably increased from 5000 or 8000 to 25000 or 50000, or even more. The mother picks up a fork that has done yeoman service at the breakfast meal, wipes it on a dish cloth that has been used for that purpose for the past week, and then proceeds to open the bottle. The hands have probably not been washed since dressing the children. The vessel in which the milk is to be prepared is taken from the table, wiped out with the aforementioned dishcloth, and the milk turned into it. A spoon that has been a companion piece to the fork at the morning meal is cleaned in the same manner and used to measure the sugar or other ingredients in the prepared food, and then used to mix them thoroughly. What will be the bacterial count in that milk in one hour? 500000 to 1,000,000, and this is not an over drawn picture in many of the homes in this city.

Can it be remedied? Yes. By the city uniting with the different charity organizations and employ nurses to go among these dependents and teach the expectant mother how to care for and prepare herself to take care of her expected child. And make frequent visits to the homes where milk is to be prepared, and teach the mother or some member of the family how to prepare the food and keep it clean.

Having obtained a clean milk of proper proportion a proper modification is necessary for the digestibility of the child, although some children may digest whole milk unmodified. It is the experience of nearly all physicians, however, that some modification is necessary in young babies. For the ordinary healthy baby a food that is relatively rich in fat and carbohydrates and low in proteids meets the requirements. This food will not answer in all cases of apparently well babies, nor in babies who have developed a fat or carbohydrate intolerance on account of sickness.

We should have some method of modification by which we can estimate the value of the food given. We should be able to estimate the per cent of proteid, fat and carbohydrate, and to approximate the number of calories in the food. As stated before, we cannot have a fixed rule but these estimates serve as a guide post.

We cannot tell when we first prescribe for a child just what food will be suited to its needs, but by following the symptoms, we should soon be able to meet the needs of the individual case. This will require close observation of the stools, the weight and general appearance of the child. It would be impractical and practically impossible in a paper of suitable length for this society to enter into a discussion of percentages necessary in the different conditions met with among babies. Many features enter into this subject. The age of the child, the state of nourishment, its ability to handle the different elements of the food, etc.

The average baby one month old will usually take care of a food containing 1 to 2 per cent fat, .5 to 1.5 per cent proteid, and 4 to 7 per cent sugar and will require 1-2 oz. to 3 oz. every three hours with one feeding at night.

The fats and carbohydrates in the food seem to be the disturbing elements largely. The proteids are not considered nearly so disturbing to the peace and quiet of the child as they once were.

As in breast feeding, we believe in the long interval feeding and for the same reason.

In conclusion.

1. The death rate among children under one year of age is too high and can be reduced fifty per cent by proper attention to feeding.

2. Many more mothers can nurse their babies than do, if properly instructed, and will if shown the importance of the same.

3. It is just as important to keep milk cool and clean after reaching the home as it is to have it clean when it arrives there.

Discussion.

N. C. Schiltz: The question of baby feeding is a very interesting one, but there are so many things to be taken into consideration that it is a hard subject to discuss.

Toward the last the doctor mentioned in his paper that the fats and carbohydrates are the principal disturbing elements in the food, and that the proteids played a minor part. I think the tide is turning a little. Victor Vaughn states that all protein substances contain poison, and that protein foods, if not thoroughly digested, may be the cause of many diarrheas, fevers, etc., of infants. These become poisonous at about the peptone stage, and if the peptones are absorbed into the circulation they would be highly injurious; whereas if thoroughly digested to the final stage of amino-acids they become harmless. The bacteria in the milk of course make more proteins. The greater the number of bacteria the bigger the dose of protein substances, and consequently the child would receive a larger dose of poison. These proteins from the living organism seem to be much more dangerous than those from the dead, for the simple reason that the animal proteins can increase and multiply in the human system, and the poisons are easily set free in the circulation, and therefore carry on the dosage of poison to a higher degree.

The doctor says the symptoms of proteid poisoning are somewhat characteristic, that is, the first stage is symptoms of irritation—probably skin irritation and mucus irritation, and in that way we get our diarrhea; and the next stage is a slight paresis or paralysis, incomplete but weakening; and the third stage is usually manifested by more or less chronic convulsions, and if the dosage is increased, the convulsions will increase in number. Of course the proteid poison being given in various doses, will produce various symptoms. He claims that by giving proteid poisons in various quantities and at various intervals, almost any type of fever can be simulated, even typhoid fever; and that by continued giving of proteids the ferments of the body are unable to handle them, and they are absorbed as foreign material in the blood.

Lenna L. Meanes: I think the whole gist of the matter is in getting the mothers to understand that it is necessary to nurse their babies. The whole problem resolves itself into a matter of education. Some way I have faith in the mothers of the country that if they once understand that, they will nurse their babies. I think the great trouble has been that we have spent too much time in telling them how to feed their babies, and on the slightest pretext have taken them off the breast and put them on the bottle. If we will pay more attention to the care of the mother and get her in good condition so that she can nurse her baby, I believe the problem will be solved quicker than in any other way.

W. W. Pearson: I am going to take advantage of the opportunity to discuss the milk problem, to which my attention has been called. I was interested to discuss the matter recently with Dr. North, who had perhaps more experience than any one else in the country in the preparation of milk. He has had charge of this department for the feeding in the city of New York. I don't know how many thousand he told me had to look after every day.

The question of milk supply is a large one, not only for infant feeding, but for the general public. Certain epidemics have been traced through it, and it has been demonstrated how easy it is to distribute infection throughout a community by means of the milk supply. Dairy plants that gather milk from the country and prepare it for use meet many difficulties. One of the chief difficulties, as pointed out by Dr. Turner, is the handling of the milk. If we had a law that forced every dairyman to reject all milk that was discovered at a temperature higher than 60 degrees, the milk supply would be very much better right at that point. Unfortunately, however, in the city of Des Moines there is no such ordinance in force, the great bulk of the milk that is supplied to the community should be rejected when it is delivered to the plant, as in this section of the country the producer does not understand how to care for his milk. The government is sending men out over the country, where it is possible to get the producers together, and instructing them in a measure how to take care of their herds, how to prepare their receptacles, and how to transport their milk to the depots for distribution. The time is coming, I think, when the municipal authorities will take charge of this. They will have to lay aside politics and learn that one of the greatest sources of distributing infection is through the milk supply, and they will have to make laws that will regulate this thing.

At present there is no uniformity in pasteurization. One of the big milk dealers of Boston—a firm that has a great many plants there—recently made the statement to a friend of mine that he had practically every form of pasteurizer, which goes to show that there is no uniformity as yet. The holding process is the most practical and efficient at this time, but ultimately, if it is practicable to reach that, the best plan would be to pasteurize the milk in the bottles prepared for delivery. That, however, is entirely too expensive to-day with any plan that is known.

Another point is the care of milk after its distribution; Dr. Turner has very well pointed that out. If you will inquire at the office of the State Dairy Commissioner, you will learn something of the complaints of the different dairies, and if you will follow up the complaints you will find that the milk is many times delivered early in the morning and permitted to remain out and exposed to the sun, and necessarily it reaches a high temperature before being placed in an icebox. The bacterial count runs up, and when neglected in this way the milk becomes sour, and that is the principal test today to whether the milk tastes good or not.

The statistics that Dr. Turner has quoted here, not only from different cities, but also from our own state, show how neglectful we are of this one feature. If an epidemic that we were handling could be

placed before the public in so many words, every one would throw up his hands and some effort would be made to restrict it, but where it creeps into each family it is not so apparent as an epidemic of smallpox would be. As physicians I think we should do all we can to improve conditions and instruct the people how to take care of their diet; and in doing this milk will be one of the first food products that we will have to talk about.

I have enjoyed Dr. Turner's paper. I think it is one of the best we have had presented for some time, and too infrequent is the calling attention of medical men to subjects of this kind.

J. W. Osborn: I want to commend Dr. Turner's paper, too, because he has so very thoroughly and effectively covered the subject of infant feeding. There isn't any question but that if we as physicians were more particular in our instruction of the mother that is to be, many mothers who undertake to feed their babies would at least try to nurse them. But after we have done all we can, there still remains a considerable number of babies that must be bottle-fed, and that is the problem that we all have to meet.

When Dr. Turner was telling about the care of the milk after its receipt I thought of an experience that a former secretary of this Medical Society, Dr. Chester Ayres, had. He and I were at that time connected with an institution, with some others who are here present, in which the death rate had suddenly risen very high. They were dying one a day; sometimes they beat that a little; and all of gastro-intestinal disturbances. We started at the wrong end to look for the trouble. We started at the cow, and when we got down to the receptacle in which the prepared milk was kept we found that a dirty old woman was placing the soiled napkins in the same box with our prepared milk. With the discontinuance of this habit the babies quit dying. It is just a very marked illustration, but one that is so forcible that we can't help noticing it, of the necessity for care of the milk after it is received; or, to put it in other words, a painstaking care from the time the milk leaves the cow until the baby has consumed it.

T. F. Duhigg: I congratulate the bachelor also on his excellent paper on infant feeding. The statistics from the mortality tables of the United States are increasing, too; i. e. about 80,000 people die every year in the United States from intestinal disorders, chiefly diarrhea and dysentery, and 70,000 of them are under two years of age, which goes to show that the babies make up practically this entire list; and of course that is due chiefly to bad feeding.

There are a great number of women that are very willing to nurse their babies and can't; that is, they nurse them until the baby begins to lose weight and is troubled seriously with intestinal disorder, and it appears plain that some change in the feeding is necessary. There are a great number of houses manufacturing baby foods, and occasionally we get one that gives excellent results. There is just one point I want to make on that, and that is the value of fresh food. The natural way is for a baby to nurse its mother; there is no opportunity for contamination, it goes straight to where it belongs and performs its function properly. The more it is handled and the more middlemen we have touch it, obviously the greater chances for contamination. If milk merely taken and handled properly in a clean dairy, and transported in the best way and kept at a low temperature, put in the bottle and passed through a hose and nipple into the baby's mouth, there are many opportunities for contamination. The whole thing is to keep it below 40 degrees. That is not always possible; so to make up for this deficiency we have what is called pasteurization, which the learned professors tell us consists in heating the milk to 157 degrees for fifteen minutes. That is a very good way to kill bacteria, but very bad if you don't cool the milk quickly. It must be placed on ice immediately, and the cooling process kept up continuously, or the final result will be worse than if not heated at all. Furthermore, it is known that heating it, even to the extent of pasteurizing it, kills certain ferments and makes the food more indigestible. To obviate that it is possible to follow the plan of skimming the milk and sterilizing the cream, and then returning it to the milk; because when cream rises it carries with it about 99 per cent of the bacteria. By pasteurizing that or heating it to more than pasteurizing temperature you kill those bacteria. Then return that to the other milk, and you have not changed the proteid not injured as many of the engymes.

The point that I got up to make is; that canned milk and water is not a good baby food that following along the same line, the more you alter

a food the more indigestible you make it, and the longer you keep it in the can the more indigestible it becomes, notwithstanding the fact that they have tested and found canned food as old as fifty-three years to be just as good as the day it was put in the can. I am a firm believer in canning food as a principle in the reduction of the high cost of living, and in polar expeditions and military operations; but since youngsters are not engaged in these operations it is not necessary to depend upon a canned food.

A certain milk manufacturer years ago made the statement that his condensed milk, made up with water—and given to children would cause them to grow and develop just the same as if they were on mother's milk. A good scientist told him he was mistaken, and that they would not develop as well as on fresh milk. So he put his own daughter on it, with the result that he produced in her a condition of marasmus which caused him to alter his views somewhat on canned and dessicated foods. If you are going to use any of the so-called baby foods you must use only those made with water and fresh cow's milk, otherwise the infant gets no fresh food whatever; it is a canned article made up with water, which will ultimately lead to starvation. It is all right for you or me or even an invalid, who is probably taking soups or broths or a little bit of meat in his diet; but an infant that gets one thing only, and that dessicated milk, will develop a condition of marasmus and will not gain in weight properly. Notwithstanding that you will find mothers who have been making up food with water only, as stated on the can, and you must instruct those women to use only baby foods where the directions call for the use of water and fresh cow's milk.

H. S. Huckins: In listening to Dr. Turner's paper and the discussions it has occurred to me that back of all this infant feeding is the matter of education. The statistics on the mortality of infants show that it is very much greater in the summer than in the winter, both in the nursed children and those who are put on the bottle. If we could educate the mother to take better care of herself when she is nursing her child, and then educate the aunts and the grandmas as to their duty towards the younger mothers, we would take a long step in the way of improvement. I have had it happen in my practice that no matter what I would say about cleanliness or suggest about the care of the child, grandma or auntie would come along and say they had raised seven or eight children, and they didn't do that way, and they didn't know anything about the possibility of bacterial invasion. We must educate the grandma and the aunts and the mothers—and I don't want to be the pedagogue, either. Dr. Turner has evidently worked at it, from his paper that he read here this evening.

D. W. Smouse: We see a good many cases of poor people around the outskirts of the city in which the mothers cannot nurse their children and are obliged to depend upon some form of artificial feeding, and they are illy prepared for taking care of cow's milk. I have been in the habit of advising the use of some of the forms of artificial food, because they can be easier prepared and the chance is better for getting them into the child's stomach in good condition than in the case with milk if it has to be kept, and especially where they have not ice or a refrigerator in which to keep it. I should like to have Dr. Turner say what he would do in that class of cases.

Dr. Turner: I certainly appreciate the interesting discussion, and think I have enjoyed it more than you could the paper.

Dr. Schiltz mentioned the subject of poison in the proteids. I made the statement that proteid of the milk is not so injurious as the fats and the carbo-hydrates. The proteids that may be formed by the bacteria in the milk may be absorbed and produce great injury, but the proteid of the milk itself does not cause nearly as much disturbance as the fats and the carbohydrates. Dr. Vaughn of Ann Arbor gave a very interesting discussion on that subject last year in the Pediatric section of the American Medical Association which was published in a recent issue of the Journal of the American Medical Association. The pediatricians of the east have all come to the conclusion that the proteid of the milk is not of a disturbing character, and that the trouble is more apt to be due to the fats. In the case of a child that is being fed excessively on fats we get the ammoniacal condition of the stool and the urine, and acidosis is almost always produced.

In regard to the milk question brought up by Dr. Pearson, the charitable institutions of the east, as well as the cities themselves, are going

into this matter very carefully. The milk stations there are reducing the mortality among the children with whom they are dealing at least 25 to 35 per cent. A nurse is employed at each station, who visits the mothers in the poorer districts surrounding it. She learns from a neighbor where there is to be a prospective mother, and then goes to this home and diplomatically states her mission and tells the mother-to-be how to prepare herself for the prospective child. When the child comes she teaches her how to take care of herself in order that she may nurse it. If she finds a mother who cannot possibly nurse the child, she finds out whether she can buy the milk, and if so, she is told to go to this milk station, where a physician is in charge, and he advises what percentage of milk should be given the child. The prescription is written out and sent to the dairy that furnishes the milk. The dairy supplies it at actual cost and sends it to this milk station. The nurse is probably supervising from twenty-five to sixty families. She goes to the milk station every morning at seven o'clock. The milk is sent there in bottles labeled for the respective families. When a child or some member of the family comes in with a receptacle—usually a bucket—she places the bottle of milk in it surrounded with cracked ice, and gives instructions how to keep the milk absolutely clean on reaching home. If the baby is reported not to be getting along well, the nurse makes a visit to the home during the day. In any event she visits that home frequently and sees the food prepared. If a baby in the district gets sick, the nurse reports it and insists that the family get a physician. The Doctor who takes charge of the milk station will not under any circumstances prescribe for a sick baby. The physician's work is voluntary, but he goes there and spends one or two hours each week visiting with the mothers who come to the station to learn how to take care of their babies. There were about thirty women with little babies at the milk station that I visited, and they said that was the ordinary number. There are nine milk stations established in Boston; in New York there are seventy-five, and the city pays for nurses to go out and look after these mothers and preside over the milk stations. The charitable institutions pay for the ice, but the family pays for the milk if it can afford to. If a worthy family is found that is unable to pay for the milk, the charitable institution furnishes it free.

I visited the station of the Walker-Garden laboratory referred to by Dr. Pearson, and also one of their dairies. They have a large number of dairies over the eastern section of the country and supply milk to a very large number of the cities. In their laboratory they have a refrigerator in which they keep the milk, sterile water, cream and buttermilk, and everything that is needed for the putting up of a prescription. In the city of Boston when a physician wants to feed a baby he writes out a prescription: per cent of fats; per cent of proteids, so much carbohydrates, so much cane sugar or lactose; and that is sent to the Walker-Gordon laboratory. The men who fill these prescriptions stay in a room into which the pipes from the refrigerator open, and no one but them is allowed in it. They wear sterile suits. The consequence is that the milk that goes out from there to the well-to-do is perfectly clean, and that which goes out from the milk station is a good quality of milk, and is furnished to the people at cost. The milk furnished by the Walker-Garden laboratory is rather expensive, however, and the people expect to pay for it; but a man would only have to throw off about 25 cents a day on his cigars to get milk for his baby.

How are we going to get our mothers to nurse their babies? You say they can't do it. I believe they can—a very large per cent of them. First we must eliminate the fear among those women who want to nurse their babies that they won't be able to. One of the physicians in Philadelphia said that the greatest difficulty he had to overcome was that moral fear. Eliminate that and you have done a great deal. It can be done, I believe, with the aid of hygienic surroundings. The mother must have outdoor exercise, automobile rides, if necessary, should stop every form of work that she is doing and devote her whole time to keeping healthy, eating nothing but nourishing foods. There is no food that you can give a mother that will make her give more milk than another, but the nourishing foods are what are actually needed.

In regard to prepared foods, I purposely left out of the discussion, because they are in a class by themselves. As Dr. Duhigg says (and this will answer Dr. Smouse also, I believe), there is no one of them that is fit of itself to be fed to a baby. Mellin's Food is composed of a large percentage of malt and dextrose, and can be used as a substitute for malt

sugar, and is so used in the East by a large number of pediatricians; but they are not feeding babies with that alone. It is with these malt foods as with salts; they absorb a very large amount of water. The tissues of a baby that has been fed upon these carbohydrates is saturated thoroughly with water, and a dysenteric condition or any difficulty that disturbs the intestinal tract of the child will throw off all this water and reduce the child so rapidly that it is unable to withstand the strain and dies in a very short time. If any of these malt foods are used, it should be in connection with cow's milk.

VESTIBULAR NYSTAGMUS.*

C. P. COOK, M. D., Des Moines.

As early as 1886, Sniedam and Hensen while experimenting on the resistance of the membrana tympana discovered that heat or cold in the external ear produced a nystagmus. But it has not been until late years that a careful study of the relationship of the different forms of nystagmus to the internal ear has been made.

Most that we know of vestibular nystagmus is due to the study of Robert Barony; but others have contributed to his research work, notably Flourens. There are yet many phenomena in connection with vestibular nystagmus that are difficult of explanation.

I will not attempt to go into these, but shall limit what I have to say to the more fixed laws and to the rules that have the fewer exceptions.

Ocular and vestibular nystagmus are differentiated by the fact that in ocular nystagmus the oscillations are always equal in velocity and are never of the rotary type, while in vestibular nystagmus the movements may be rotary and there is always a quicker movement in one direction. The quicker movement is called the quick component of the nystagmus and it is by this movement that the nystagmus is designated. However, it is the slow, not the quick movement that is of vestibular origin. The vestibular irritation produces an efferent impulse that draws the eyes slowly to one side, then an irritation due to the muscle traction sends a message of discomfort to the cerebrum and the cerebrum swings the eyes back, producing the quick movement.

Therefore the quick movement is of cerebral origin and the slow movement of vestibular origin. Just where the cerebral center for this movement is located is not definitely known but it is somewhere in the temporal lobe.

The nystagmus is produced by irritation of the end organs of the vestibular branch of the auditory nerve. Through the vestibular nerve the stimulus is carried to Deiters nucleus in the floor of the fourth ventricle and from there transferred to the oculo-motor nucleus from which an impulse is transmitted over the third nerve to the extrinsic muscles of the eyes, producing the nystagmus. The fourth and sixth nerves are also factors in vestibular nystagmus

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but the tract over which they receive the stimulus from the vestibule is not well understood.

Vestibular nystagmus is best studied by artificial vestibular irritation. This is produced in many ways, but I will take up only the thermic and turning experiments as developed by Barany.

These forms of experimental nystagmus are produced by the flow of the endolymph against the crista ampularis. If the cupulo of the crista ampularis is bent in one direction by the flow of the endo-lymph the action of the vestibular nerve is stimulated, while if bent in the opposite direction, the action is inhibited.

The first is called the positive and the second the negative side of the crista. In the horizontal canals the positive side of the crista ampularis is the side proximal to the canal, while in the vertical canals, the positive side is reversed, being the side proximal to the utricle.

The parts of the vestibular apparatus involved in nystagmus are the utricle, semi-circular canals, ampula and crista ampularis.

This chart illustrates the action of the endolymph in the vestibular apparatus in the turning test. In the turning experiment the subject is placed on a revolving stool and turned from left to right, ten consecutive revolutions in from twenty to twenty-two seconds. The inertia of the endolymph causes a flow from right to left. This produces a primary nystagmus in which the quick component is in the same direction as the turning. But as soon as the turning stops the inertia of the endolymph produces a reverse flow which changes the quick component from right to left.

Consequently we have the quick component of the primary nystagmus in the same direction the subject is turned and the quick component of the secondary nystagmus in the opposite direction.

The difficulty experienced in observing the primary nystagmus makes the secondary nystagmus the important one. So in studying the right ear we should turn the subject from right to left to secure the maximum action of the secondary nystagmus in the right ear.

In applying the turning test to the anterior vertical canal, the head must be bent forward ninety degrees. To apply it to the posterior canal the head must be bent to the right or left ninety degrees. This is necessary to place the canals in the plane of the rotation.

Nystagmus is always in the axis of the canal that produced it. Horizontal canals produce lateral nystagmus, anterior vertical canals produce rotary nystagmus and the posterior vertical canals produce vertical nystagmus.

The cold and heat tests involve the same principles as the rotary test. If cold water is injected in the right ear, it causes a cooling and settling down of the endolymph in the anterior vertical canal. A downward flow of the endo lymph acts on the nega-

tive side of the crista ampularis and inhibits the action of the vestibular nerve; consequently the opposite canal would have predominant action and the quick component of the nystagmus would be to the left. However, should warm water be used there would be an upward flow of the endolymph and the positive side of the crista ampularis would be stimulated, producing a nystagmus, the quick component of which would be to the right.

When the head is in the erect posture, the horizontal canal is in a horizontal position, but the center of the arch of the canal is lower than the ends, therefore with cooling of the endolymph a downward flow is produced which bends both crista, causing a compound horizontal and rotary nystagmus. But when warm water is used, the flow is upward and as the cupola of the horizontal canal points upward, the flow of the endolymph does not bend it and no horizontal nystagmus is produced so the resultant nystagmus is of the simple rotary type.

The posterior vertical canal is located so far back from the tympanic membrane that the thermic tests will not apply to it.

The practical application of these tests is useful in detecting a disabled or nonfunctionating labyrinth. If the after nystagmus in turning in one direction is only half as enduring as when turning in the opposite direction, the labyrinth producing the half enduring after nystagmus is disabled. If one labyrinth responds to the thermic test and the other not or only slightly, the weak response indicates a disabled labyrinth. A slight variation in the duration of the nystagmus in the two ears is of little importance but should the ratio be as much as 1 to 2 the weak reaction indicates a disabled labyrinth.

Spontaneous nystagmus stronger to one side always indicates vestibular or intercranial disease. Nystagmus, the result of vestibular or intercranial disease is usually of either the rotary or compound type.

In pathological spontaneous vestibular nystagmus the quick component is always first to the irritated or diseased side until the labyrinth becomes destroyed when it swings to the opposite side. This is due to the lack of inhibition to the functionating labyrinth by the destroyed labyrinth.

This nystagmus to the well side will continue for about four days after which nature adjusts the balance and the nystagmus gradually ceases.

Should the nystagmus switch back to the diseased side after the destruction of the labyrinth, the indication is that there is an extension of the suppuration to the meninges or a cerebellar abscess. Pressure along the course of the vestibular nerve or irritation of Deiters nucleus will produce the same phenomena.

Should the nystagmus switch to the side opposite to the diseased labyrinth and instead of gradually subsiding after the fourth

day it increases in activity and violence, then there are intercranial complications difficult to locate. This might be the result of a cerebellar abscess producing pressure on the side of Deiters nucleus opposite to the side of the diseased labyrinth.

Should the nystagmus continue to the diseased side with increasing violence the physiological tests should be tried. If the labyrinth fails to respond to these, a labyrinth operation should be performed to clear up the picture. Should the nystagmus continue there are intercranial complications.

A cerebellar lesion not irritating Deiters nucleus or the vestibular nerve will not produce a nystagmus of the vestibular type.

In conclusion I will repeat that—rotary nystagmus is always of vestibular or intercranial origin.

Any nystagmus with a quick component is of intercranial or vestibular origin.

The quick component is always to the diseased or irritated side unless the function of the labyrinth is inhibited or destroyed when it will swing to the side of the functioning labyrinth.

Discussion

W. W. Pearson: It is interesting to note that the analysis of the question of inner ear trouble had its origin only a few years since. I think a Hungarian many years previous to the time that Barony recorded his work was the first to have any kind of a conception of the vestibular nystagmus. Much work has been done, and our literature in the past few years has been full of the discussion of these conditions. It is interesting, however, to talk with men of wide experience and learn how a few cases of internal ear trouble develop other than those associated with luetic conditions. I might limit the conditions to that. We occasionally of course, see an extension from the middle ear to the labyrinth, but in fifteen years' practice I think I have seen no case of such extension. I can recall here and there cases in the literature that have followed injury from paracentesis injury to the stapes, or possibly to the oval window (less frequently to the latter, because of its protected position). The possibility, however, of differentiating between labyrinthine nystagmus and intra-cranial processes has been cleared up in many cases. It is fortunate that the infective processes extend to the internal ear so infrequently, because of the difficulty of operation on the internal ear.

The doctor has given us a very concise, clear statement of a rather complex condition. One must study this much as a mathematician studies calculus to form a clear idea of the subject. I must admit that I have gone over this several times, and still feel that my knowledge of the subject is very limited. It occurs to me, however, that some of these most distressing conditions, where we have deafness and extremely annoying tinnitus, may eventually be handled in a surgical way—in fact, they are so treated in a limited way—so as to relieve our patients of this symptom, and of course in some of these cases where the continued lack of stability renders a patient unfit for most anything; that is the lack of power to maintain himself in the proper position without becoming dizzy. In some of the cases of fracture of the temporal bone this feature persists for many years. I have in mind one man whom I saw two or three years since. He was struck on the temporal bone with a baseball and was very dizzy for some little time. I saw him a year after the accident. At that time, walking along the street, turning his eyes suddenly to one side he lost control of himself and was disposed to fall in that direction. He was a professional ball player, and this one feature rendered him incapable of following his profession. If the ball struck on the left side, he couldn't go after it because he lost all sense of position and became dizzy and was unsuccessful in reaching for the ball. However, he could go to the other side without difficulty.

It is a very interesting subject and, like so many of the subjects of our specialty, I feel that it is rather trying to discuss a group of men in general medicine. The proposition is usually too complex to discuss intelligently so that men who have not made a study of it, hardly understand it, when we understand so little of it ourselves. I have enjoyed the paper, and I like the concise manner in which it has been presented.

SOURCE OF INFECTION FROM THE NOSE AND THROAT. *

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In treating of this subject I will confine myself to the infection which takes place through the accessory sinuses of the nose or through the tonsils. I do this because most of the infections proceeding from the nose or from the throat are from one of these two sources. When making this statement I have in mind the fact that Flexner has demonstrated that in epidemic cerebrospinal meningitis it is more probable that the accessory sinuses do not serve as the portal of infection in the same way as does the nasopharynx. Flexner has demonstrated beautifully in monkeys the passage of the meningococcus from the meninges into the nasopharynx, and he considers the mucus membrane both as a portal of infection and also as an exit. In other forms of infection, having their source in the nose and throat, the accessory sinuses or the tonsils have been demonstrated by clinical experience to have a greater degree of vulnerability than the other points in this region. To illustrate, we see almost every day of our practice, pseudomembraneous angina clearly localized on the tonsils while the remainder of the mucus membrane of the throat continues healthy. Then, too, we see the chancres on the tonsils and the infections of the throat and nasopharynx with their primary lesions on the tonsils. We are not including the buccal cavity in this discussion. If we did it would be necessary to include the teeth and the alveolar processes, structures which rival the accessory sinuses and tonsils as portals of infection. While we will confine ourselves, in this discussion, to the accessory sinuses and tonsils, we will bear in mind that infection may take place through the mucus membrane lining of any part of the nose or throat. We will also keep in mind the fact that the bulk of diseased conditions involving the nose or throat that make such a source of infection possible are the result of infection from the accessory sinuses or from the tonsils. For instance, the various forms of chronic rhinitis we today consider to be secondary to sinusitis. Pharyngitis is usually the result of infection through the tonsils.

It is of interest to note that the two prime sources of infection about the head are structures that are of little use to the organism,

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especially at the time of life that this infection is produced. The accessory sinuses in man are vestigial structures. The only functions they have is to increase the surface of bone for muscle attachment without increase in weight, and to serve as resonance chambers. In some of the lower animals they are much more developed than in man and contain the turbinate bodies, on the surface of which are the end organs of the olfactory nerve. Most of the animals with sinuses of this nature have the sense of smell wonderfully developed and are capable of trailing their prey by means of this specialized sense. In man, as you know, the sense of smell is not well developed. With the exception of a few classes of people, as chemists, perfume and liquor experts, this sense is very dull. We have no turbinates in our accessory sinuses and the end organ of the sense of smell is in the mucus membrane lining the nose.

In the Antilles, it is said, there is a race of small men that are capable of trailing their prey and enemies by means of the sense of smell. The race is a primitive one. But few people have seen them and returned to civilization to tell about them. We know nothing about the anatomy of their heads. The statement that I have made about their sense of smell is based on hearsay and is not necessarily accurate.

With the development of the brain cavity it has been pushed forward. With the pushing forward of the brain space the sinuses and the alveolar processes have both diminished in size, with a loss of function on the part of the sinuses and a diminution of the number of teeth in the jaws, the latter being a good scientific basis for the expression we so often hear that the race will eventually be a toothless race.

What the function of the tonsil is I do not know. I do know it is not a vestigial structure. It is highly developed in man. It increases after birth in comparative size. It has not the characteristics of a vestigial structure. Whatever function it has is exerted before the end of the third year. I say this because after the third year, normally, the tonsil begins to diminish in size, loses its lymphoid structure, and at the age of fifteen may be simply a fibrous mass. Again, innumerable tonsils have been removed in children at the age of three without any disturbance of function being noticed. Tonsils are usually not diseased until after the age of three. Consequently it is after they have lost whatever function they may possess and are really of little or no value to the organism, like the appendix and accessory sinuses, that they are capable of causing most trouble.

Accessory sinus infection is exceedingly common. It is not, I think, ordinarily considered to be a source of general infection. The importance of the subject I believe to be underestimated. Before I realized that the sinuses were important as sources of infection one of our colleagues whom you all remember well, was under my

care for accessory sinus suppuration. From this he developed a suppurative ear, then an appendicitis and finally abscess of the liver. During the last year I saw a case of infective arthritis that accompanied a sinusitis. This case had an acute infection of a number of joints, one after the other. There was but little or no improvement in the case after a number of weeks of treatment both at home and in a sanatorium. Immediately following drainage of the infected sinuses there was a rapid improvement in the arthritis and the patient soon recovered.

A very careful search of the literature in our library and in the libraries of Chicago has failed to reveal very much on the subject of sinusitis and infection, consequently if you will pardon me I will confine myself more or less to my own experience in this line. Rhese, in the *Archives für Laryngologie und Rhinologie*,¹ goes rather deeply into this subject. In my practice I have seen the following results of sinusitis: meningitis serosa and purulenta, thrombosis of the longitudinal sinus, brain abscess, encephalitis, tubercular meningitis, cervical adenitis, rheumatic arthritis and nephritis. Intracranial hemorrhages are also reported as the result of sinusitis.¹ Suppurative ear troubles I have seen definitely the result of sinusitis. Of ocular lesions there have been numerous cases of iridocyclitis, papillitis, retrobulbar neuritis, practically all of which have resisted all forms of treatment until the sinuses were investigated. Laryngitis, tracheitis, from infection from above, stomach and intestinal catarrh from the swallowing of pus, are not uncommon. I may mention that metastatic abscesses of other organs followed by death have come under my observation. Time does not allow the report of individual cases, however interesting they might be. All internists and all rhinologists recognize sinusitis as a most common source of general infection and I can hardly understand the scarcity of literature upon this subject. I am very certain that during the next decade it will become very abundant and in every case of general infection where the focal source is not plain the sinuses will be examined. In our clinic we never consider that a patient with an arthritis or any other form of infection, the cause of which is not plain has been thoroughly examined until his sinuses have been under observation. About ten years ago, in a paper presented before this body, I took up the then comparatively unknown subject of the relation between suppurative sinusitis and some cases of asthma. Today the relation between the two is well understood and the indications for surgical treatment of the sinuses in certain cases of asthma definitely known.

Diffuse osteomyelitis of the bones of the cranium is one of the rarest complications of nasal sinus suppuration. It is one of the most common complications of external operation for nasal sinus suppuration, especially of external operations upon the frontal sinus. In this case, however, we have the so-called traumatic dif-

fuse osteomyelitis and not the kind that was formerly classed as idiopathic. It has been studied comprehensively by Dr. Dan McKenzie.² I can remember three cases of this nature in my practice, one originating from Highmorian empyema, the other two from frontal empyema. In one of my cases, for a number of months pieces of bone were discharged from various parts over the forehead and cheeks. Apparently a subdermal abscess would form. After incising this a spicule of bone would be discovered. With its removal the area would heal. In the course of the next few weeks another abscess would make its appearance. It would be similar to the first.

McKenzie,² in his very comprehensive investigation of this subject, concludes that idiopathic cases of osteomyelitis of the cranium are exceedingly rare. It was as recent as 1897 that Tille reported, before the British Medical Association, a case of osteomyelitis as a complication of nasal suppuration. Up to that time most of these cases were supposed to be secondary to some general infection. Since that time most of the cases in literature have been referred to nasal sinus or aural suppuration. Following the investigation of McKenzie we are justified in concluding that this septic osteomyelitis is usually the result of sinus disease. In looking over the literature we find that it has resulted from the disease of every sinus with the exception of the sphenoid. Time alone will tell as to whether the sphenoidal empyema is capable of producing osteomyelitis or not. Most of the cases are the result of frontal sinus suppuration. I would like to go into the method of infection in osteomyelitis, with the spread of disease in the bone, and the direction of extension. Such a question would be sufficient for a paper in itself and will hardly come within the scope of our discussion today.

The more common results of sinusitis are cervical adenitis, intracranial lesions, infections of the eye or ear, rheumatic arthritis, septicemia and nephritis. In inflammatory conditions of the accessory sinuses the most common kind of bacteria present are the pneumococcus, micrococcus pyogenes, and the bacillus influenzae. The bacillus tuberculosis is not commonly present but is present often enough to be responsible for many serious sequellae. As a result of sinusitis we may have suppurative meningitis, influenzal meningitis, pneumococcal meningitis and tubercular meningitis, abscess and sinus thrombosis. It is probable that the infection extends from the sinuses to the brain along the lymphatic spaces. Such a route, after very careful investigation by Logan Turner,³ and by Broeckart,⁴ has not been proven. Our knowledge of the arrangement and distribution of the lymphatic apparatus of the sinuses is still very meagre and we are unable to give a descriptive account of them. In some cases the infection extends by direct

continuation of tissue through necrotic bone to the brain. Again in other cases the infection is through the lymphatics.

Many cases of suppurative meningitis are supposed to be the result of taking cold, the result of lying upon the cold ground, exposure, etc. Frequently the infection comes from the presence of a chronic suppurative sinusitis. The exposure to cold has diminished the resistance on the part of the organism and the infection has extended to the brain cavity.

While we are not considering today the infections from the ear we must remember that the ear plays the same part as the sinuses in producing intracranial troubles. In this connection there is a curious thing well known to all men doing special work, which we do not attempt to explain. That is this: that suppurative sinusitis involving the sinuses adjacent to the brain is much more common than suppurative otitis. Nevertheless the suppurative conditions in the brain secondary to middle ear disease are many times more numerous than those secondary to sinus disease. For example, in my practice, I would judge roughly, that I have seen perhaps thirty cases of brain abscess secondary to middle ear disease, while I have seen only one case of brain abscess secondary to sinus disease.

Another interesting fact is that in operating upon the mastoid we can expose the brain with impunity; curette the dura if we please; but exposure of the dura or its manipulation in sinus operations is an exceedingly serious thing and something to be done only when absolutely necessary.

Pneumococcal and Influenzal Meningitis.

With these forms of meningitis I have had but little personal experience. Logan Turner is of the opinion that most cases of pneumococcal meningitis are secondary to infection of the sinuses, while in influenzal meningitis the infection may be through the sinuses or through the nasopharynx. Tubercular meningitis is certainly not infrequently secondary to sinus troubles. Only recently have I seen, in the service of Doctor Weaver, of Muscatine, a patient with chronic empyema of the frontal sinuses with erosion of the dural plate of the right frontal, with a large tubercular meningeal lesion at this point and general tubercular cerebral meningitis. This is the second case that has come under my observation where the infection could be traced directly to the sinuses. What we have said about septic meningitis, of course, is true of brain abscess and sinus phlebitis.

The lymphatics of the sinuses drain into the submaxillary and cervical glands, consequently we have secondary to sinusitis submaxillary and cervical adenitis. These cases, both acute and chronic, are exceedingly common in our practice.

Septicemia with death following sinusitis I have seen in three cases.

Unfortunately in the cases of sinusitis I have seen with acute

joint involvement, we have not had opportunity of determining whether the same organism was present in the sinuses as was present in the joint. Where we have a septic arthritis secondary to a sinusitis the drainage of the sinuses is not sufficient to bring about a cure. While it is probable that a cure of the arthritis is impossible as long as the sinusitis is present the removal of the sinusitis will not cure the arthritis. After the eradication of the focus of infection, the sinusitis, the joint lesion may only improve under proper treatment.

Otitic infections, the results of sinus disease, are exceedingly common. They are so common that we are rather inclined to expect them than not when we have sinusitis. The infection extends by direct continuity of tissue along the surface of the nasopharynx and up the Eustachian tube.

I anticipate that now in the minds of many of you there is depicted a picture of a specialist who is, shall we use the term, more or less of a fanatic on this subject. In order to disabuse your minds of any such impression as that, let me quote to you the opinions of some excellent internists.

Whittacre says, in the "Twentieth Century,"⁵ "The tendency of modern belief is to regard the throat as the avenue of entrance for the micro-organisms of rheumatism and endocarditis." This work was written almost twenty years ago.

Holt⁶ says, acute tonsillitis often occurs in an attack of rheumatic arthritis and occasionally in acute endocarditis.

Frank Billings⁷ has a most excellent, complete, and to me, exceedingly interesting article upon this subject. He says, "It has long been known that acute rheumatic joint infections are the result frequently of a primary infection of faucial tonsils." He thinks that the abundance of tonsillar tissue explains the frequency of infections like acute rheumatic fevers, diphtheria, acute tonsillitis, etc., in the early periods of life. He further says, there can be no other reason for the presence of rheumatic fever in children than the frequency of local infections in the throat and nose. Quite as frequently children have endocarditis without other symptoms, or rheumatic infection which has its source in the throat. He gives to the various sinuses their proper importance as harbors of focal infection and cause of systemic diseases. He classes the tonsils and sinuses in with chronic appendicitis, chronic infection of the gall bladder, urinary tract and genital tract, as sources of infection. In the article under consideration he confines himself to infections originating from the tonsils and sinuses. He reports thirty cases of chronic arthritis of a deforming type and sub-acute and chronic parenchymatous nephritis whose original and focal infection appeared to be in the tonsillar tissues.

It is noteworthy that from the tonsils of many of his cases a streptococcus was obtained in pure culture which, when inoculated into rabbits, produced an acute arthritis, either simple or multiple,

and in many of the animals produced an arthritis of the deforming type. Furthermore, from the dead animal's tissues the streptococcus has been again obtained in cultures. It was also found that cultures from patients who had no evidence of systemic infection contained the streptococcus practically identical with those patients who had systemic disease. From the tonsils of patients suffering from nephritis a streptococcus was obtained which produced albuminuria when injected into rabbits. He call attention to a fact which we have found to be particularly true with our patients, namely, that where the tonsils are the focal source of infection in arthritic disease, the removal of the tonsils is not sufficient to produce a cure. It is necessary to apply the proper hygienic and local treatment to the infected joints. The influence of the enucleation of the tonsils is positively demonstrated by the fact that local and hygienic treatment did not produce a cure before the removal of the tonsils and did afterward.

In the last month, in the service of Doctor Howard, we have had an interesting case of multiple arthritis that would not be benefited by treatment until the tonsils were enucleated and became rapidly well after their removal.

It is not my purpose in this paper to debate the practical enucleation of all adenoid tissue from the throat when tonsils are operated. I will simply state my frank conviction that that is the only reasonable and safe procedure. I am very glad to note that such an eminent internist as Doctor Billings agrees with this view. In connection with the enucleation of the tonsils let me call your attention to the fact that the size of the tonsils has nothing to do with its danger to the organism. Some submerged tonsils are just as liable to cause trouble as large tonsils.

Osler, in his recent System of Medicine, speaks in no uncertain terms. He says,⁸ "The tonsils, the microbic hotbeds, are responsible for a good many cases, and if, as is now commonly believed, the infection of acute rheumatic fever is here nurtured, they take the first rank as sources of infection." And again, he says,⁹ "Much could be done to lessen the number of cases of rheumatic fever, of chorea, and of endocarditis, if we attacked more vigorously the enlarged tonsils of children. Here is the point towards which our efforts should be directed. A child subject to recurring attacks of tonsillitis or with marked adenoids should have the tonsils or adenoids thoroughly removed. Other measures of local treatment simply trifles with that which is always a dangerous condition."

We notice here that Osler confines his attention almost exclusively to the tonsils, while Billings, in his work, does not give them a rank equal to that of the sinuses.

In looking over the literature of infections from the nose and throat one is impressed by the great rarity of articles dealing with sinusitis as a source of infection as compared with the tonsils. In

our service where the sinuses are examined just as carefully as the tonsils, notwithstanding the fact that it requires so much time and work, we find sinusitis exceedingly common. I would think that ethmoiditis was just as common as chronic tonsillitis. In my judgment, when the diagnosis is better understood and the frequency of this condition is recognized and its presence more often detected, the sinuses will rival the tonsils as sources of systemic infection.

There are numerous interesting facts in connection with diseased tonsils. One of them is that we frequently remove a tonsil which is diseased, but more or less innocent looking, which contains a chronic abscess. I presume that I have removed twenty-five tonsils this winter, each of which contained a chronic abscess, the presence of which was not suspected by myself before operation.

Again, we can take an ordinarily chronically diseased tonsil, enucleate it and throw it into bichloride. This will destroy the microorganisms that are present on the surface of the tonsil. Then take this tonsil and pare it as you might a potato, macerate it and inject into a guinea pig and the guinea pig will die. Innumerable people carry with them at all times such tonsils.

Again, in cases of rheumatic fever tonsils have been removed, and from their interior organisms have been isolated which produce multiple arthritis when injected into rabbits. And in patients who do not suffer and have not suffered from arthritis, tonsils have been removed and streptococci secured from them, which produced acute joint lesions when injected into rabbits.¹⁰ In many cases the arthritis produced was of the deforming type. In some animals where death was not produced the joint processes became chronic, with marked anatomical changes.

There is an enormous number of people with diseased tonsils who do not suffer from joint infections. It naturally occurs to us that there must be some other element present in individuals, or something lacking in some individuals, which permits the systemic disease to attack them while others who present practically the same local condition with chronic focal infection escape. We see many people with chronic tonsillitis and with chronic sinusitis that have no infection in any other portion of the body. It is a well known fact that excessive fatigue, exposure to cold, etc. is apparently the cause of arthritis, acute nephritis, endocarditis, etc. We assume that the resistance on the part of the body is diminished in some way allowing the micro-organism to infect other structures. As a matter of fact, when speaking of this resistance I am talking about something which is to me, vague but nevertheless, in my mind is a definite thing. I hope that the time will soon come when scientific experimentation will give us a more definite idea as to just what it is that happens when, from exposure to cold, a chronic, quiescent tonsillitis becomes an acute follicular tonsillitis, a chronic sinusitis becomes an acute sinusitis with an abundant discharge of pus.

As the result of chronic tonsillitis we may have nephritis, we may have acute rheumatic arthritis, we may have chronic rheumatic arthritis, septic arthritis, endocarditis, myocarditis, septicopyemia, pneumonia, cervical adenitis, tubercular and non-tubercular, and tuberculosis in other portions of the body.

The relation between chronic tonsillitis and tuberculosis is an interesting one. In the first place, it has been shown conclusively that the bacillus tuberculosis may pass through the tonsils without leaving behind any evidence of its passage. It is likewise interesting to note that Schlasberg, in the *Dermatologische Zeitschrift*,¹¹ says that the tonsils may transmit the spirocheta pallida without clinical manifestations. Again, Harbitz¹² reports that lymph glands presenting nothing but simple hypertrophy or even normal structure may contain virulent tubercular bacilli without other evidences of tuberculosis. This is most common in the cervical glands, mostly in infants less than one year old. These are significant facts bearing on the absorption of bacilli through tonsils. Whether the presence of these bacilli imply infection or not is a question not yet decided. I anticipate that the tonsils as the most important source of infection for tubercular glands of the neck would pass unquestioned. The fact that tubercule bacilli are found so commonly in tonsils, six per cent or seven per cent would be making the estimate a low one; again, the removal of tonsils having such a decided influence at times upon the tubercular glands of the neck; the clinical fact that to get a good result both glands and tonsils should be removed; all these things point definitely to the relation between diseased tonsils and tubercular glands of the neck.

The question as to the relationship between diseased tonsils as a source of infection and pulmonary tuberculosis is one regarding which there is no unanimity of opinion. There is, however, in my judgment a definite relationship between these two conditions, be the tonsils the focal source of infection or not.

The facts are that among the patients at Oakdale there is an enormously large percentage of cases of chronic sinusitis and chronic tonsillitis. This is a constant condition and one that we have observed from the opening of the Sanitorium. Not only do we find this large per cent of chronic nasal and throat infections, but we find that practically every case whose lungs are in condition to warrant operative procedure upon the nose and throat is markedly benefited by removing the chronic focal infections. Do not understand me to say that patients with pulmonary tuberculosis should have these operative procedures performed. My experience would lead me to say that only after these patients have been under careful observation by one experienced in that line of work, and determinations made as to whether the pulmonary condition is quiescent or not, should the work be done. At the Sanitorium, Doctor Scarborough watches these patients carefully, and comparatively speaking, in

only a few of the cases does he feel that it is safe to have this operative work performed. A patient with a sinusitis or a chronic tonsillitis and an active pulmonary tubercular lesion should have the sinuses drained by suction, the chronic tonsillitis controlled by the use of Bier's vacuum cups and silver nitrate in the crypts, rather than subject the patient to the diminution of resistance which will follow operative procedure.

In very young children with a diagnosis of pulmonary tuberculosis we see the most remarkable results from the removal of large tonsils and adenoids. I do not think that we have ever operated on one of these children without phenomenal improvement, the improvement in this case being due not to the removal of the source of infection but rather due to the upbuilding of the organism as a whole by removing the lesion obstructive to respiration.

A careful review of the literature shows a large number of diseases that may be secondary to diseased tonsils.

Rosenheim, of Baltimore,¹³ has reviewed this subject quite thoroughly. From this review and reports of others we find various forms of arthritis, nephritis, acute, sub-acute and chronic pleuritis, endocarditis, orchitis, septic infection, purpura and erythema nodosum. (During the last six months I have seen two cases of erythema nodosum following tonsillitis).

Finder¹⁴ reports diphtheria, scarlet fever, appendicitis.

Poynton and Paine¹⁵ confirm the idea of Kelyanack that tonsils may sometimes cause acute appendicitis. They report that they have isolated the same diplococcus in the tonsils and in the appendix in several individuals suffering from acute appendicitis and that in one case a rabbit injected with the diplococcus developed appendicitis. We must remember the enthusiasm of the authors in their work and I believe their conclusions have not been definitely accepted.

The relation between acute tonsillitis and nephritis is to me rather interesting. Most of the cases that I know of have been in the families of physicians. Probably because here the urine has been more carefully watched than in other cases. In short many of the cases that I know of have been in the families of members of our specialty. During the last year I have seen two marked cases of acute nephritis that were evidently secondary to acute tonsillitis. The nephritis following tonsillitis is usually not discovered until after the tonsillitis has disappeared, differing in this way from that accompanying diphtheria and scarlet fever. Many cases I believe have been considered to be idiopathic because the tonsillar infection has not been closely observed.

The relation of tonsillar infection to endocarditis is one which, unfortunately, we not infrequently see examples of. I think in the last year I have seen four cases of endocarditis where the internist has made the diagnosis of the disease being secondary to tonsillitis.

The condition of these cases was such as to bring forcibly to my attention the extreme serious results that may come from tonsillitis. Fortunately all of these cases with removal of the source of infection and proper after treatment have made a fair improvement.

Infected tonsils are certainly responsible in some cases for chronic rheumatic joint disease, and for arthritis deformans. I have had in my practice three beautiful cases of chronic rheumatic arthritis that were operated a year or more ago, where, as a result of the enucleation of the tonsils, there has been a complete cure. Recently, in the service of Doctor Howard, we removed diseased tonsils in a case of arthritis deformans. This was only about two months ago. Clinically up to date there has been a decided improvement.

Last fall we had a beautiful case of nephritis, evidently secondary to tonsillitis, that improved rapidly after the enucleation of the tonsils.

I know of only two cases where it seemed positive that endocarditis followed tonsillitis. There has been an improvement in both of these cases following enucleation of the tonsils.

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MASTOIDITIS.*

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Notwithstanding the mastoid process has engaged the attention of clinicians and pathologists for many years, it would seem from current literature as if it were as yet but little understood. Doubts, fancies, and the cry of conservatism, have prevented the application of the same sound surgical principles to this anatomical structure as prevails with other parts of the body,—notably the appendix,—with which it has so many common features. Few there are who would delay an appendectomy or the excision of the necrosed head of a femur to determine the action of an autogenous vaccine; nevertheless some would have us believe the vaccines capable of arresting bacterial infection, displacing necrosed bone, and even destroying tuberculous processes, when the mastoid has been the seat of invasion. Conservatism has offered a cover for many, for so long a period that one cannot but wonder if it must always remain a stumbling block to scientific progress. Conservatism, in the lessening of occasions for the performance of the radical mastoid operations and those on the meninges, is precisely the goal attained by those who recognize tympanic infections as surgical from their onset and treat them accordingly. Unfortunately many of the pathological changes in the mastoid are not accompanied by constant or pronounced symptoms, and as a consequence the diagnosis is veiled in obscurity.

The mastoid is composed of many groups of cells which communicate with each other and the tympanic cavity. Each cell has a mucous lining continuous with the additus, tympanic cavity, Eustachian tube, and pharynx, and in early infancy or in later years where ossification has failed, communicates through fissures with the cerebrum and tympanum. There is an additional lymphatic, arterial and venous communication with the tympanic cavity and contiguous part. This anatomical arrangement permits the rapid transmission of infection to the tympanum, mastoid, sinuses and meninges, either by forcible expression through the Eustachian tube in the act of sneezing, blowing the nose, or the use of the Eustachian catheter; through the lymphatics in diseases of tonsils or nasal accessory sinuses; or through the veins, producing infective thrombi of the sinuses. Probably no one factor contributes more extensively to ear complications than adenoids, diseased tonsils or nasal obstruction, and in every instance should receive the prompt attention its importance demands.

The foremost of all infections, from the frequency of its occurrence, the insidiousness of its onset, and the rapidity and extent of its progress, is the streptococcus. In all these cases there are temperature and pain in the ear, but as the secretions in the early

*Read before the Iowa State Medical Society, 1913.

stages are small in amount and watery, an aural examination may reveal but insufficient evidence of its dangerous character. There is little tendency to rupture of the tympanic membrane, and unless prompt measures are adopted, new foci of infection are soon established. The character of the discharge, however, may not truly represent the nature of the deeper invasion, as I have recently observed in two cases. The incision of the tympanic membrane was followed by a profuse watery discharge which did not change in character; While lurking in the deep recesses of the mastoid an active streptococcus infection was spending its fury. It is possible a blood examination would have shown the presence of streptococci.

The pneumococcus is of equal importance, although it occurs less frequently as a complication. It is very destructive in its ravages, and shows a decided inclination to produce thrombi and meningeal complications. In all cases of pneumonia where the temperature shows a tendency to protraction, or where the severity of the symptoms seems out of proportion to chest involvement, repeated examinations of the ear may determine a mastoid infection. I recall a pneumococcus infection of the mastoid upon which I operated eight hours after incision of the tympanic membrane, and but nine hours after the first sign or symptom of ear complication was present. The patient had run an irregularly high temperature for three weeks, and as some complication was evidently present, frequent examinations of mastoid and tympanic drum were made with but negative results. The operation revealed a very extensive destruction of bone which certainly must have been in progress longer than the signs and symptoms would indicate.

Tuberculosis plays a very important part in aural affections, and especially is this true in that class of cases where a low grade of erosion of the mastoid mucus membrane has taken place without the formation of pus. The patient complains of constant pain in the ear and mastoid, runs a slight temperature, has some mastoid tenderness, and loses weight. The mastoid cells present a dry, glistening appearance, the erosion of the membrane is complete, and the evidences of osteomyelitis unmistakable.

The staphylococcus mucosus infections occur much less frequently. Mastoid complications are of very frequent occurrence in the exanthematous diseases, syphilis, diabetes, albuminuria and typhoid fever. You are all familiar with cases of measles and scarlet fever of unusual severity, accompanied by high temperature, headache, restlessness and marked irritability, suddenly relieved by the rupture of the tympanic membrane and escape of purulent discharge. The attention may not have been directed to the ear, and the failure of early recognition may have sufficed to establish a meningitis which has passed beyond the realm of surgery. So varied and marked are the symptoms presented in many of these cases that it becomes necessary to make frequently repeated examinations for ear

complications, if its early recognition is to be made. There is always increased temperature during the acute stages of the infection, but later, when the surrounding parts have established a tolerance for the offending material, the temperature cannot be relied upon, and at no time is the temperature curve an indication of the severity or extent of involvement. I have had cases of sinus thrombosis and meningeal abscesses with normal temperature upon repeated examinations. An aural examination reveals an inflamed or bulging drum with evidences of congestion of the auditory canal. Tenderness on deep pressure over the mastoid is one of the most reliable symptoms. The cessation of pain on the escape of the tympanic contents through the membrane, although a favorable symptom, is not in the least conclusive of the non-existence of a mastoid abscess. Much pain may be produced by boils or inflamed areas in the auditory canal, and slight tympanic congestion may be produced by temporary closure of the Eustachian tube; but aside from these the diagnosis of tympanic infection presents no difficulties. Having determined the presence of tympanic infection, the case becomes surgical throughout. A free incision of the posterior inferior quadrant, permitting free drainage, is quite sufficient in the majority of cases. Frequent douchings of the canal can have no possible effect on the progress of the disease, as none of the fluid can reach the diseased areas, while a new infection may possibly be added through your efforts to that which already exists. Should mastoid tenderness not yield promptly to tympanic drainage, it is unwise to permit the constant bathing of the ossicles and tympanic membranes with corroding pus, to say nothing of the dangers of new foci of infection. Under these circumstances it is dangerous to delay the mastoid drainage. Properly performed, the simple mastoid operation has but a very slight mortality, and is in no way comparable to the dangers from extension of infection, facial paralysis, or the establishment of a chronic otorrhea.

Having begun the evisceration of the mastoid, it is incumbent that the work be complete. The most careful search for and obliteration of all cells, wherever found, is quite essential, if recurrent attacks are to be prevented. If the case has been neglected and an otorrhea has existed continually or at recurring periods for a term of months or years, and despite medicinal treatment properly applied, has failed to respond, the radical mastoid operation then becomes imperative. If the ear has been treated surgically throughout, the necessity for a radical operation should rarely exist.

Bacteriological examination of the discharge by cultures cannot always be made for lack of time and convenience, and as the stained smears are not dependable, we must largely rely on the clinical features for our guidance. However, where suspicion of sinus involvement exists, a blood examination for streptococci is quite essential, although not positively diagnostic.

Discussion on the papers of Drs. Dean and Shore.

The President: These two papers are before you for discussion. I will say in reference to these two papers that it was thought by the committee that it would be advisable to have papers, one for the section on medicine and one for the section on surgery, from men doing special work, written for the practitioner. I am sure these papers confirm the judgment of the committee on the selection of the men to deliver the papers, and are worthy of discussion.

Dr. M. Bannister, of Ottumwa: I would like to have Dr. Dean differentiate simply enlarged tonsils from diseased tonsils. There seems to be a tendency on the part of a great many nose and throat men to try and differentiate these tonsils and remove only the enlarged and diseased tonsils. I would like to know how they determine definitely whether they are enlarged and diseased, or merely enlarged.

Dr. C. F. Wahrer, of Ft. Madison: While he answers that question I would like to ask whether it is Dr. Dean's judgment that all tonsils be enucleated, completely taken out, or simply a tonsillectomy made on some of them?

Dr. M. J. Kenefick, of Algona: These are cases that concern us all as practitioners. The general practitioner has more to do with the treatment of tonsillitis than the specialist. It is very seldom that cases of tonsillitis fall into the hands of the specialist. That is, it has been true in the past. I know of no operation done by the general practitioner that is so poorly done and so bunglingly as tonsillectomy or tonsillectomy. I am an advocate of tonsillectomy. I am not of tonsillectomy. Tonsillectomy is done by a good many of these general surgeons, and they do it poorly. Some of these men devote themselves exclusively to the practice of surgery, but in tonsil operations they are no better than the ordinary country doctor. I have seen it done by some world-renowned surgeons, and they do it bunglingly. They seem to think a tonsil operation doesn't amount to much. I have seen a general practitioner take out an appendix from start to finish in thirty minutes, and yet do a most bungling operation when it came to the tonsils. I am forcibly reminded of a remark by Christian Fenger. He came into his clinic one morning when a throat man had preceded him. Blood all over the floor. Says old Christian, "Hmm, hmm. Here is much blood but damned little surgery." That is true.

I clipped some tonsils several years ago for a country school teacher. She was down here later attending Highland Park College, when she had an attack of tonsillitis. I thought I had them out, but I didn't have more than a third of them. Dr. Shore took out the other two-thirds, and she brought them up to me to show me what I had left.

I have thrown away that old guillotine. That, I think, is an instrument that should be relegated to the museum. Now if you attempt to take out an appendix, you don't cut off half of it or a third of it, and leave the balance there. Get it all out. Get at the root of the evil, if you are going to do it at all.

Dr. Dean has quoted medical men like Billings and Whittacre, and Howard. They recognize that the tonsil is the portal of a great many infections. We have endocarditis, and we have infectious rheumatism. Take the mastoid operation. It may be simple, and it may be the most complicated operation you can undertake. Take acute infectious mastoiditis and in very many cases you will get a recovery, but most disastrous consequences may result from delay, and we are to blame. A radical mastoid operation is a most serious affair, and they come about by cases of neglect of otitis media. We fail to diagnose them until they get into the hands of the specialist. And then may come meningitis. You have all seen these cases, and we should avoid them.

Dr. V. L. Treyner, of Council Bluffs: I think some of the extremely important things in reference to infections of the nose and throat are the terminal infections. We all see terminal infections following septic sore throats which in their inception occasion very little solicitude on our part, and yet those very cases of sore throat that apparently recover will lighten up again in the course of three or four days, or ten days, and you will have mastoiditis, or you may have empyema, or you may have general peritonitis, and very frequently a general articular inflammatory condition as the result of infection primarily in the throat.

In the streptococcic infections which have been occurring in the last two years, it is exceedingly interesting to follow the sequence of events.

It was found in Chicago, Baltimore and Boston, that a direct relationship, could be traced between mastitis in the cow and sore throat of the milker and subsequent sore throats in the users of that milk. The same thick encapsulated streptococcus was found in the secretion from the udder of the cow, from the throat of the milker, and from the individual contracting sore throat after using that milk. This was an exceedingly virulent streptococcus which lost its capsule in transference through artificial media, but immediately assumed the capsule again on normal transmission and again became virulent. Now we ought to be conversant with the fact that these inflammatory conditions of the throat have more than simply a local significance. We must remember that even if these infections do not cause death immediately, they do give rise to certain secondary infections which may ultimately result in death, e. g. endocarditis, and I think our treatment of this class of cases ought to be along a little more active lines than has been the custom in the past.

Dr. O. F. Parish, of Grinnell: I would like to ask Dr Dean if there is a cause or relationship between tonsillitis and appendicitis. Just recently I have had three cases of tonsillitis, and within three or four days appendicitis followed in these cases. It made me think that perhaps there might be a causal relationship.

Dr. Dean: I have been asked when an enlarged tonsil is a diseased tonsil? The English and American authorities, and even the different men in our own country would express various opinions in answer to this question. It is definitely known that in children under one year of age the bacillus tuberculosis is sometimes present in the tonsil itself and in the tonsillar gland which is directly beneath the angle of the jaw. There is no reaction in either tonsil or gland and histologically they are normal. This and other facts have resulted in a most unique theory, namely, that the function of the tonsils is to aid the organism in immunization. That is the tonsil serves as a microbic hotbed in which immediately after birth the organism develop and form toxins which enter into the circulation of the body and result in the production of immunity. Personally I have little confidence in this explanation of the function of the tonsil. Occasionally, however, you will hear the theory defended with earnestness.

In direct answer to the question as to when a tonsil is diseased, I would say that:

First, whenever it has lost its light pink tint and is either a dark red or a lighter color.

Secondly, when you press the tonsil and it has not the soft feeling but is springy, and especially if it is at the same time enlarged.

Thirdly, if the patient has at any time had acute tonsillitis he is a sufferer from chronic tonsillitis.

Fourthly, whenever there is a caseous material present in the tonsillar crypts.

Fifthly, whenever the tonsillar gland which is located underneath the angle of the mandible is enlarged.

The exception to the above rules would be the normally shrunken tonsil which is light colored, fibrous, surrounded by a normal pharyngeal membrane, has no caseous material in its crypts and is not accompanied by cervical adenitis.

I have been asked to tell when a tonsillectomy should be performed, and when a tonsillotomy. My plan is this: with a child under three years of age, unless there is a cervical adenitis or indications of diseased tonsils, I assume that the child is suffering from a simply hyperplasia of the tonsil and I do a tonsillotomy. I do this because I am not certain that the tonsil has not a definite function in children under three years of age. In individuals over three years of age I always do a tonsillectomy because so many have been operated that we know there will be no bad results. Whenever I do a tonsillotomy in very young children I always tell the parents that the probabilities are that a second operation, a tonsillectomy, will be necessary later. A large per cent of these cases will need a tonsillectomy before they are ten years of age.

THE VALUE OF CONSULTATION*

CHAS. E. GETHMAN, Eldora.

Outside of the ministry there is no class of people so insanely jealous of each other as physicians. Just why this is so, cannot well be explained in the light of reason. It has always existed and will exist until the end of time. I found it in the profession when I entered the practice of medicine twenty years ago, and I observe it today, but, I think, in a less hostile degree.

One can readily see that where the profession is overcrowded and competition is keen and the question of bread and butter is involved, there might be some excuse for this jealousy and distrust, and in the struggle for supremacy, it is not surprising to find that many questionable methods are resorted to to outwit the competitor. But in communities where the profession is not overcrowded, there can be no reasonable excuse for this feeling, yet it exists, and the same underhanded methods are employed to disparage the fellow practitioner.

I do not wish to be understood, however, as saying that this feeling exists in the same degree in all communities and that all doctors are at "outs" with each other. That would be far from the truth. In some communities it is hardly noticeable, while in others the very atmosphere seems to be impregnated with it. In some communities the doctors have very cordial relations with each other and I venture the assertion, without fear of contradiction, that in such communities the most efficient medical service is rendered to the public. This feeling of jealousy and distrust is a serious handicap to the profession. It is on this account, that when counsel is demanded, so many importations are made from neighboring or distant towns. The doctor who is thus called in, can have no ulterior motive and the attending physician runs no risk of losing the case. In ninety-nine cases out of a hundred, however, any one of the home physicians would have answered every purpose.

In this statement, however, I do not wish to include cases where expert counsel is demanded and necessary. In such cases, it is often necessary to import a doctor from some distant town, and under such circumstances, such practice is perfectly proper and legitimate. But I am speaking of the general run of cases. If the doctors were absolutely on the square with each other, this practice would be less conspicuous and they would be the gainers, both in an ethical and in a financial way.

Right here I would like to drop a word to the public. People often make a serious mistake in discharging the attending physician and calling in another. The attending physician, if he is a conscientious and painstaking man, has studied every phase of the case in question, and he is best qualified to meet any complication that may

*Read before Hardin County Medical Society, Dec. 17, 1913.

arise. The new man must necessarily go over the same ground, in order to master the case, at the expense of valuable time and often to the detriment of the patient. If you are dissatisfied with your physician, demand counsel and choose your own man, and if he refuses to counsel with your choice, discharge him and turn the case over to another. Where two physicians are unfriendly with each other, there can be no possible good derived from a consultation.

Years ago I was called in consultation in a neighboring town, where a question of diagnosis was involved. Dr. D. met me at the depot and escorted me to the home of the patient, introduced me to the family and in an off-hand way said: "Now, Doctor, examine the patient and tell the folks what the trouble is." I had scarcely begun the examination when Dr. L. arrived upon the scene.

By the way he greeted the other doctor and myself, I saw at once that trouble was on hand. Had I known that the dispute was between the two physicians of this town, I should have refused the invitation and let them fight it out themselves. But since I was on the ground and retreat was impossible, I continued the examination, and with hesitancy, I pronounced it a case of scarlet fever. I had scarcely gotten the words out of my mouth, when Dr. D. sprang to his feet and pointed his finger directly at Dr. L. and said: "There didn't I tell you this was a case of scarlet fever?" I will not attempt to give Dr. L.'s reply; his remarks wouldn't look well on paper. For the next five minutes these two eminent gentlemen belabored each other with epithets and curses that would have done credit to a pirate captain. The result was just what I expected. Both of these men were discharged and a fourth man called in who continued the case.

Subsequent events proved that the diagnosis was correct. In less than a fortnight from that time an epidemic of scarlet fever broke out, comprising some 21 cases and three of them resulted fatally. Had these two men lived up to the dignity of their profession the disgraceful scene would not have occurred, the epidemic might have been prevented and the lives of three children saved.

The questions that came to my mind at that time and have often been repeated since are: "If physicians cannot trust each other, can the public trust them?" "If physicians cannot be honest with each other, can they be honest with the public?"

If I have a clear conception of the object of consultation, I take it for granted that the first consideration is the patient; the second the public; and the third, mutual helpfulness between the attending and consulting physicians. A consultation failing in any one of these objects is a farce and a needless expense to the patient.

I want to condemn the old-time method of the consulting physician examining the patient with the attending physician, and perhaps one or two members of the family; then retiring to a private room, talking the case in a monotone, and then re-entering the sick

room, assuring the patient that everything is being done that can be done; when in reality a different diagnosis has been arrived at and the whole method of treatment has been changed. Such a procedure is not only dishonest, but is a discredit to the medical profession. It smacks, altogether too much of star-chamber politics and ought to be put in the same category.

Unless the patient is in a critical condition, the consultation should be held before the invalid, and if this cannot be done, before some member or members of the family. Free and frank discussion should always be indulged in, avoiding of course, such remarks as might shock the sensibilities of the patient. If there is a dispute over the diagnosis, the matter can be amiably settled without the least disparagement of the attending physician. In fact, I consider it one of the grossest breaches of ethics in the medical profession for the consulting physician to take advantage of the mistakes, or differences of opinion, to disparage the attending physician by word or deed, in the eyes of the patient. In the matter of treatment, the widest latitude of discussion should be allowed. A free and frank discussion before the patient, inspires confidence, and honest differences of opinion cannot prejudice the case.

It has been my good fortune to attend many consultations, both as an attending physician and also as a consulting physician, where the consultation was conducted before the patient, in which a complete change of treatment was suggested, without giving the least offense to either party. I recall one in particular, which occurred at New Providence. The family demanded an old family physician of Newton, Iowa, as counsel, to which I readily gave consent. The consultation was held before the patient and the doctor suggested a remedy which was new to me and I promptly told him so, but at the same time assured him that the remedy would be used and given a faithful trial. This frank admission on my part did not militate against me, after 15 long years, I still retain the confidence and respect of this family. Although this remedy, which the doctor suggested, did not avail in that particular case, yet in all these years since, I have never forgotten it and have used it in similar cases with marked success. I look back on this one and other consultations with a great deal of pleasure and satisfaction, and I also look back upon others with a great deal of dissatisfaction and regret. I recall one in particular where one of the physicians took occasion to inform the family, on the side, that if they had called him in counsel in the first place, he would not have diagnosed it a case of contagious disease and thus saved them the inconvenience of quarantine. In law they call such a practice "petifogging. In medicine, we call it "quackery." Either one or both of these terms are altogether too mild, but my version of the man will not look good in print, so will let it go at that.

The real value of a consultation can only be measured by the

good derived to all concerned. A consultation, in which the spirit of true helpfulness is not the dominant factor, is a mis-carriage of the real object and had better not be held. A consultation, not absolutely necessary, unduly alarms the patient, as well as the family, and should never be indulged in. A consultation between two physicians who are mortal enemies, is at best an embarrassing proposition and should be avoided, if possible. On the other hand, to refuse to counsel with a physician because he is your enemy, is unethical and beneath the dignity of our profession. At the bedside, we ought to have at least the manhood and the good grace to lay aside all personal differences and labor for the good of the patient. To refuse to counsel with a physician because he is one of the lesser lights in the profession, should be particularly disparaged by all men in practice. The English language absolutely fails me in expressing my contempt for such a man, and I hope that the laws governing medical practice will be made stringent enough to make such a refusal a sufficient cause to revoke a license to practice. We cannot all attain to the same heights of efficiency. We cannot all be stars in the profession, but we can all extend a helping hand to our brother. In this day and age of new fads and new cults and new cure-alls, it behooves the physicians to get together in closer fellowship for the good of the cause and for mutual protection as well.

THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

EDITORIAL

Jan. 6, 1914.

Editor State Journ. Iowa Med. Society,
Clinton, Iowa.

Dear Sir:

Read the enclosed, and if you have a spark of manhood and fairness, publish it, and square yourself for the article in which you allow yourself to be hoodwinked by Harris and Councilman. How long before you will wake up?

Very truly,
G. Frank Lydston.

Office of
State's Attorney
of
Cook County, Ill.
Maclay Hoyne,
State's Attorney.

Chicago, Illinois,
December twelfth,
Nineteen Thirteen.

Dr. G. Frank Lydston,
815 Reliance Bldg., Chicago, Ill.

Dear Sir:—

We have delayed answering your letter making certain inquiries concerning a controversy in the courts between you and the American Medical Association, because we desired to make some investigation concerning the matter.

In answer to your first question, we beg leave to say that the merits of the question between you and the American Medical Association are fairly presented to the Appellate Court and by that court passed on. The court held that the election of trustees of a corporation organized in this State should take place in this State, and that the members of the Association should be allowed to vote in person or by proxy. The court also held that former State's Attorney Wayman should have signed the petition for quo warranto presented to him on your behalf.

Your second question is covered by the answer to the first.

As to the third question, the employees of my office did not defend the suit. The suit was defended by Mr. Fred Z. Marx, an attorney at law, with offices in the Title & Trust building, room 1310. By whom Mr. Marx was employed we do not know. We do not know whether he received any fees from the County. You

would probably discover whether he did by inquiry from the comptroller in the County Treasurer's office. This answers your fourth and fifth questions.

As to your sixth and seventh questions, appellant's brief to the Supreme Court was not prepared by this office, and we do not know by whom the expense was borne.

As to your eighth question, we cannot answer positively because if an appeal had not been taken to the Supreme Court other proceedings might have been had in the court below. Such proceedings would probably have been the issue of a writ of mandamus to compel the State's Attorney to sign the petition for quo warranto proceedings, and thereafter there would have been a hearing on this petition. As we understand it, the Medical Association demurred below, thereby admitting the facts set up. We do not see how they could well have changed their position had not an appeal been taken.

Hoping that we have given you the answers to the questions you desire, I am

Yours very truly,

(signed) Maclay Hoyne

State's Attorney,

By (signed) E. E. Wilson

Assistant State's Attorney.

P. S.—We find that Mr. Marx was originally employed by Mr. Wayman to defend him in this matter and that his successor, Mr. Hoyne, was substituted as appellee in the Appellant Court.

(COPY)

We are offering to our readers some choice literature in which I believe the profession in Iowa will be interested. The first we offer is a letter received from one G. Frank Lydston followed by a letter to him from the States Attorney's office. It can readily be understood that when a country editor receives a letter like the above, that he would naturally feel something of a shock. We are not conscious of publishing anything that any fair minded person could criticise. We had presented to our readers the statement made by the Board of Trustees of the American Medical Association. In the January number we go a little into the history of the question of incorporation of the association with which I was quite familiar at one time. Referring to the publication in the December number, of the journal, it will be found that the enemies of the association endeavored to bring certain questions before the courts of Illinois through the County Attorney. The County Attorney refused to do so as likewise did the Attorney General, on the ground that there had been no violation of the law of Illinois. Finally the question was brought before one of the District Judges by independent suit, as is also stated in this report, and which is not

denied, and the case was dismissed. Then an appeal was taken to the Appellate Court where the rulings of the judge below were reversed, the court holding that there was evidence enough to go to trial on. It can be readily seen that this is not a trial of the cause, nor does it refer to any other statement of facts than set forth in the petition submitted by Lydston. Now if the Supreme Court of Illinois should affirm the rulings of the Appellate Court, the case would then be tried on its merits before the proper court. Now in our opinion if this man Lydston gets any comfort out of a victory of this kind, let him have it. There can be no question of doubt in the mind of any fair minded person that if the American Medical Association has been doing work in violation of law, the plan should be changed. It is probably unfortunate that the headquarters of the association were located in Chicago, but it was done and the incorporation was within the state of Illinois, and it is fair to presume that the legal opinion was to the effect that there was no statute in Illinois that forbade the A. M. A. doing business in the way that was set forth in its application for incorporation. It is extremely difficult for us to appreciate the condition of mind which influences Lydston in his prosecution of the A. M. A., yet when we come to examine the sayings of the Illinois State Medical Society and the doings at the present time of a major portion of the State association, we feel that it is really a psychological question.

There are a considerable number of very high grade men in the medical profession in Chicago, and in the state of Illinois, but to those of us outside it looks very much as if the profession in Chicago was throwing away their opportunity of making Chicago a great medical center. Certainly with the bad feeling existing there, and the questionable methods employed, we should feel very little enthusiasm for the upbuilding of professional affairs in Chicago. It looks to us outsiders as if it required all that could be done to keep the profession even in lines of decency and respectability, say nothing of greatness.

Since writing the above the Supreme Court of Illinois has reviewed the case of Lydston vs. Wayman, which is the alleged suit against the American Medical Association and has sent the case back to be begun over again; we do not know upon what grounds, but something that is technical to the law.

The 10th Annual Conference of the American Medical Association on Medical Legislation and Medical Education.

The 10th annual conference was probably more largely attended than any of the preceding conferences. Unquestionably the interest in these meetings has constantly increased, and members of the medical profession who are interested in the development of medical education and medical legislation and public health and ef-

ficiency, can hardly feel that they can afford not to attend these conferences. It is probably true that the men doing the great clinical practice of the country, can not afford to attend these meetings because they have their own private business to attend to which pays better than the general questions of medical education and medical legislation, efficiency, etc. A certain number, however, of men in the medical profession feel that they have public duty resting upon them in endeavoring to bring about better conditions. It is conceded on every hand that the general welfare of the profession is forwarded by the conferring together of the men who have been largely instrumental in bringing about what may be granted as a better condition in the medical profession.

The meeting just recently closed, had under consideration some important matters in relation to pre-medical courses of study. President Lowell of Harvard University raised serious objections to the rule that requires a certain amount of chemistry, biology, and physics, before entering the medical school. President Lowell granted that this knowledge was essential to the understanding of scientific medicine, but that it was not to the best interest of the profession to exclude all trained men from entering the medical colleges that did not have these requirements as prescribed by the rule. In his opinion it was permissible for students who entered the medical college without the fixed requirement, to make it up later on in a special course. President Lowell's contention was that many of the best men who had completed a college course, had not yet determined upon their future calling, and that it was only after graduation from college, that they finally concluded to take up medicine. None of these men should be excluded from a medical college because they did not know before hand what their professional work would be and provide for it accordingly, and it would mean that some very bright minds and well trained men would not be able to take up medicine; that as a matter of fact we should accept the individual student rather than to accept a rule that could not always be fairly applied.

Professor Vaughn of the University of Michigan took the position that a young man could not intelligently enter upon the study of medicine without a certain amount of chemistry, physics, and biology, and that he would not be able to secure the full benefits of the medical course. Dr. Vaughn held that the rule of fixing the qualifications in these three branches should be retained and that the student should be required to prepare himself in these branches so as to pass a proper examination before he entered upon the study of medicine. Dr. Vaughn was willing to admit that students might make up the deficiency by means of summer courses, but that making up deficiency in this way was not as satisfactory as a special premedical course providing for these subjects would be. There seemed to be a sentiment prevailing in the conference that President

Lowell was right in his views, that if a well trained and able young man presented himself as a candidate for the study of medicine and was not able to pass the several studies mentioned, he should be permitted to enter upon his course and then make up the deficiency afterwards. There seemed to be a feeling on the part of those who participated in the discussion that the weak point in the rule for premedical education extended to our entire educational system, that there was provision made for those who were not able to keep up with the average student, but there was no provision made for the superior student who was held back by the rule which was formulated for the average student only.

The 5th year, clinical or hospital course, came up again for consideration. For a number of years past the sentiment has been constantly growing in favor of requiring a hospital year, but that it was hardly practicable to put it into force until provisions could be made for standardizing hospitals to such an extent as to make it profitable for the medical graduate to spend an additional year.

In Germany many of the municipal hospitals not located in University towns have organized very definite and scientific plans for the 5th or hospital year work. Under regulations that have been adopted in Germany, such a year becomes of very great value, and it would be of value in certain parts of our own country, but in hospitals that are managed as many of our hospitals are managed, it would be a hardship rather than a benefit for a young man to give a year that has very little to recommend it. In fact, we know from personal observation that it would have a depressing effect upon a young medical man's scientific spirit to spend a year in a certain class of hospitals which are altogether too common in this country.

Deaths of Children by Burning.

While fatalities from burning are but a minor fraction of the mortality from preventable causes, they are sufficiently numerous to warrant an attempt to prevent them. This is especially true of deaths of children from burning. In this country there are a few available correct statistics on the subject. In England, however, it is different; there the statistics are not only dependable, but available. Dr. Brend has compiled and analyzed the data regarding deaths of children from burning. The results are reprinted and commented on in a recent issue of The Journal of the American Medical Association. From the years 1906 to 1911 he found that up to the age of 1 there were 214 boys and 234 girls burned; from 1 to 4, there were 1,663 boys and 1,818 girls; from 4 to 5, 368 boys and 775 girls; from 5 to 10, 389 boys and 1,427 girls, and from 10 to 20, 80 boys and 630 girls. It is at once evident that there is a marked difference between the mortality of boys and girls. This difference is probably due to the different type of clothing worn

by the two sexes. Up to about the ages of 2 and 3, boys and girls are dressed alike. From 3 to 4 the boys put on the simpler male attire and there is an abrupt and marked fall in the mortality from burning. There has been much condemnation of the material known as flannelet, which is a very inflammable cloth, although from the figures quoted it would seem that it is not so much the material as the style of clothing which leads to loss of life. For other reasons as well, namely, freedom of movement, better hygiene and general cost of clothing, there would seem to be a demand for a further simplification of the manner of dressing girls, particularly those of the younger ages.

Health Department of the State University.

It has been reported that the Board of Education contemplates establishing a Department of Health at the State University. This is certainly a movement in the right direction as a systematic training in this direction is of the greatest importance in these days of sanitary progress. It is unfortunately true that a large number of medical men go out in practice with but small knowledge of scientific health regulations. While this is true of medical men it is true to a much greater degree of non-medical men and it is to be hoped that a professor in this department will extend his instructions beyond the medical students so as to include those who may to a greater or less extent be responsible for local health matters in towns and villages. Of course to make this valuable it must be entirely educational in its function. It has been intimated that the Health Department at Iowa City would act independently of the State Board of Health. This will result in a failure of the undertaking because it must be conceded that there can be but one authority on health matters in the state and that is the State Board of Health itself. The relations then between the State Board of Health and the Health Department of the State University should be that the Health Department of the University shall be a teaching organization while the State Board of Health located at Des Moines shall have charge of all executive matters relating to the execution of health laws and the studying and working out of outbreaks of disease. To make the work of the State Board of Health more efficient, the state should equip proper laboratories in connection with the health board at Des Moines under the control of the Secretary directed by the State Board of Health itself. We can thus easily understand how useful an arrangement of this kind would be; the training of medical students and others interested in health matters by the University, and the control of state matters so far as relates to the state having at its hands in Des Moines all the facilities for working out the several problems. As it is now with the laboratories at Iowa City and the office of the State Board at Des Moines, there must necessarily be a loss of time and perhaps some

little conflict, and certainly the efficiency of the State Board of Health must be lessened by this fact.

THE CLINICAL CONGRESS IN LONDON.

The London Committee on Arrangements.

General chairman—Sir Rickman J. Godlee, Department chairmen:—Surgery of the Eye—Mr. W. H. H. Jessop, Surgery of the Ear—Mr. Arthur H. Cheate, Surgery of the Nose and Throat—Sir St. Clair Thompson.

Honorary Secretaries—Mr. Herbert J. Paterson, Mr. Herbert S. Pendlebury.

Hospital Committee:—Mr. McAdam Eccles, Mr. Maynard Heath, Mr. Cuthbert Wallace, Mr. C. Ryall, Mr. C. H. Fagge, Mr. G. E., Waugh, Mr. H. S. Pendlebury, Mr. Tyrell Gray, Mr. J. Sherren, Mr. Percy Sargent, Mr. T. H. Kellock, Mr. J. Thompson Walker, Mr. R. Johnson, Mr. H. W. Carson, Mr. W. H. Clayton Greene, Mr. J. Jackson Clarke, Mr. F. F. Burgard, Mr. P. Lockhart Mummery, Mr. H. S. Clogg, Miss Aldrich Blake, Mr. James Berry.

Evening Sessions:—At the four evening session addresses on live surgical topics will be delivered by surgeons from all parts of the world, selected because of their particular fitness for the task assigned.

Those who have already accepted are Sir William Osler, Oxford; Mr. Robert Jones, Liverpool; Dr. Charles H. Mayo, Rochester; Professor Tuffier, Paris; Dr. G. E. Armstrong, Montreal; Mr. Henry Jellett, Dublin; Sir William MacEwen, Glasgow; Dr. John B. Murphy, Chicago; Mr. Williams, Birmingham; Professor von Eiselsberg, Vienna; and Professor Kroenig of Freiburg, Germany.

Three evening meetings, devoted to addresses on some subject pertaining to Surgery of the Eye, Ear, Nose, Throat and Mouth, will be held independent of the general surgical meetings. The orators for these sessions are being selected by the London Committee having in charge the program for these specialties.

Headquarters:—Capacious headquarters have been reserved at two of the largest hotels in London. Registration and evening meetings for general surgery will be at the Hotel Cecil, the former in the Victoria Room, the latter in the Grand Hall. Registration headquarters for Surgery of the Eye, Ear, Nose and Throat, and the evening sessions for these specialties have been arranged for in the Ballroom of the Savoy Hotel.

Hotel Accommodations:—The time for the session of the Congress was chosen with special reference to securing ample hotel accommodations for those attending the London meeting. It is immediately after the general rush of tourists to London; and therefore there will be no difficulty in securing hotel accommodations, although we must advise that reservations be made in advance.

The hotels in close proximity to headquarters are the Metropole, Windsor, Carlton, Grand, Victoria, Imperial, Russell, Waldorf, Ritz, Piccadilly, Great Central.

Arrangements for Clinics:—Mr. A. D. Ballou, General Manager of the Congress, is now in London making detailed arrangements for the session of the Congress. All the operating rooms and amphitheaters of the various hospitals are being canvassed and a careful estimate of the capacity of each made. A system of numbering is being carried out that will make it possible for each member of the Congress to receive definite coupon seat tickets in advance for all operations and demonstrations,

thus avoiding the possibility of confusion that must of necessity occur without seat assignment. The London hospitals are capacious and the operating rooms sufficient to accommodate a very large attendance.

The official journal of the Congress, Surgery, Gynecology and Obstetrics, will publish a preliminary clinical program in the April number.

THE NEW LUTHERAN HOSPITAL

Des Moines.

A new and very complete hospital has recently been opened in Des Moines by the Lutheran Church. The first patient for operative treatment was admitted March 14th. This new hospital has a capacity of 80 beds. It can take care of 100 patients by a little crowding. The building is fireproof and is complete in every particular. Only comparatively few of the rooms have been furnished. We were very much pleased with the hospital. It is beautifully located in East Des Moines overlooking some of Des Moines' best views.

The staff has not been fully organized, but we understand that Dr. O. J. Fay will be the Chief of the Surgical Service and Dr. A. C. Page Chief of the Medical Service.

Des Moines is to be congratulated on having three modern and up-to-date hospitals that can reasonably be expected to attract patients from various parts of the state.

COLONEL GORGAS APPOINTED SURGEON GENERAL.

The appointment of Col. Wm. C. Gorgas to be Surgeon General of the United States Army with the rank of Brigadier General will give great satisfaction to the medical profession. Great praise is due Col. Goethals for his remarkable skill as an engineer, organizer and administrator, and he is not likely to be overlooked either by Congress, the President, or the people. The case may be somewhat different with the man who made Col. Goethal's success possible, but we suppose the unostentatious scientific worker who lays the foundation of great enterprises will always leave less impression on the public mind than the man who accomplishes it. The public none of the less approves the granting of honors to its scientific workers when it understands their value. Col. Gorgas has been so intimately identified with the great sanitary work accomplished in Cuba and in the Panama Canal Zone, and has done so much for humanity and commerce by his knowledge, skill and wisdom and powers of organization, that anything his country can do for him can scarcely add to the honors which the entire civilized will accord him. However, the recognition accorded by promoting him to the highest place created by law in his branch of the service, is peculiarly gratifying to the medical profession, which several years ago conferred the highest honor in its gift by electing him President of the American Medical Association.

THE SURGICAL WORK OF THE BROTHES MAYO.

It is interesting to note the movements of the great centres of surgical influence. It may perhaps, be said that half a century ago France—that is, Paris—dominated the surgical world; a quarter of a century later the great German schools were the most influential, while today the keen surgeon of our country recognizes the value of widening his outlook by a visit to the United States, or at least by cultivating a close acquaintance with the work of American surgeons. The advance in American surgery has been for the past decade or more extraordinary rapid. It is to be accounted for by the influence of a few men. Two summers ago we had

opportunities of making personal acquaintance with some of the best known surgeons of the States when they visited this country; all were distinguished by strong energetic personality. Without disparagement of others, perhaps few features of American surgery attract British surgeons, more than the Brothers Mayo and their work at St. Mary's Hospital, Rochester.—(British Medical Journal, May 24, 1913).

UNTRAINED TRUSTEES.

"Very often trustees are men who know nothing whatever of hospital management, who have to be educated in their job, and, once they have become really useful members of the committee, they unfortunately sometimes fail to gain reelection, and the process of education has to be gone over afresh, to the detriment of the hospital," says The Hospital (London). "With a strong chairman, difficulties can be tactfully overcome, but it makes the work of managing a hospital more difficult rather than easier; to put it quite bluntly, the real management of a hospital has to be done "in spite of," not "by means of" their assistance. Where the body of governors is very large and the number of their representatives on the committee is proportionate to their numbers, there is often fussy interference with subordinate officials, nurses, etc., and discipline is undermined."—(The Modern Hospital, October, 1913).

INCREASE OF CANCER IN ENGLAND.

The British Society for the Relief and Prevention of Cancer has recently issued a summary of mortality statistics from cancer for the period from 1851 to 1910. These figures show that in sixty years the annual number of deaths from cancer has increased from 17,365 to 43,134, representing a rate increase from 497 per million to 960 per million. At this rate, within five years the deaths from cancer will be more than those from tuberculosis, and cancer will rank first as a cause of mortality.

MICHIGAN ANNUAL REPORT OF MEDICO-LEGAL COMMITTEE.

In 4 years, 94 cases—32 of these cases occurring in 1913.

Paid in 1913, attorney's fees, \$2,150 in 15 cases.

Ten cases have been tried out; seven won and three lost.

It is believed that the operation of Workmen's Compensation Act by diverting the attention of damage lawyers has increased the number of litigation cases against doctors.

HONORS FOR AMERICAN SURGEONS.

On the 31st of July, 1913, a brilliant galaxy of American surgeons were made honorary Fellows of the Royal College of Surgeons of England. The list included Drs. W. J. Mayo, Harvey Cushing, G. W. Crile, and one of our own members, Dr. J. B. Murphy.—The Railway Surgical Journal, Aug. 1913.

A Woman's Number.

The May issue of the Medical Review of Reviews is to be a Woman's Number. All the articles contributed will be from the pens of women physicians whose work has achieved national importance. With the growth of the feminist movement, the economic position of women has attracted universal attention. As medicine was practically the first profession open to women, it is only proper at this time to consider whether their entrance into the medical profession has been of benefit.

In order that women may present testimony by which they should

be judged, it has been deemed advisable to give them an entire issue to present the evidence of the value of their accomplishments. In the laboratory, in the hospital, in institutions, at the bedside, and in public service, women physicians have performed a valuable function. As a tribute to their earnestness, enthusiasm, modesty, energy, perseverance, and scientific acumen, the May number of the Medical Review of Reviews will be dedicated to the women physicians of America.

LORD STRATHCONA'S MEDICAL BEQUESTS.

The will of the late Baron Strathcona Mount Royal who died Jan. 21st in London, contains bequests of \$500,000 to the Royal Victoria Hospital, Montreal, and \$90,000 to hospitals in the British Isles.

TYPHOID FEVER IN THE UNITED STATES ARMY.

The Cincinnati Medical News says that the United States army had only two cases of typhoid fever for the year 1913 in the enlisted strength of more than 80,000 officers and men.

Roswell Park, M. D., so well known to the profession of Iowa as a surgeon and scientist, died suddenly from heart disease at his home in Buffalo, Feb. 15th. Doctor Park was born in Pomfret, Conn., May 4, 1852. Graduated from Racine College A. B. 1872 and received his A. M. three years later. In 1883 he was elected Professor of Surgery of Buffalo, which position he held until the time of his death. His contributions to surgical science and to pathology are well known as well as his work as director of the New York Cancer Laboratory. Dr. Park was a man of attractive personality. Few men enjoyed as he did the respect and affection of the medical profession.

Dr. John Auer of the Rockefeller Institute for Medical Research will lecture before the Des Moines Pathological Society, April 17, 1914 at 8 p. m. on the subject of "The functional disturbances of various organs by serum hypersensitiveness."

The profession throughout the state is cordially invited to attend this lecture which promises to be one of the most important of the season. Dinner will be served at 6:30 p. m. Plates \$1.25.

Very respectfully,

THOS. F. DUHIGG, President.

CHIROPRACTORS REFUSED CHARTER IN PENNSYLVANIA.

Justice Potter of the Supreme Court of Pennsylvania recently handed down a decision affirming an order of the Common Pleas Court of Pittsburgh, denying a charter to an organization known as the Chiropractors' Association of Pennsylvania. The refusal of the charter was based on the ground that the applicant had no legal status under the medical practice act.—Texas State Journal of Medicine.

In the Journal of the Medical Society of New Jersey, Feb. 1914, appears a somewhat extended abstract of a paper read by Dr. Walter L. Bierring of Des Moines—"Thrombosis and Embolism."

Dr. J. C. Waterman formerly of Council Bluffs, is now practicing in Burke, S. D.

Dr. William J. Mayo of Rochester has been elected a corresponding member of the Academy of Medicine, Paris.

PROPAGANDA FOR REFORM.

Deafness-Cure Frauds.—The name of the deafness cure quack is legion. Some carry an alleged cure for deafness as a "side-line", some sell on the mail-order plan their worthless "course of treatment", while still others, and these probably are in the majority, dispose of, at an exorbitant price, devices that are trivial, worthless and often dangerous. The following are some "deafness-cure" concerns: Dr. L. C. Grains Company (formerly Dr. Guy Clifford Powell), Chicago, Dr. Edward E. Gardner, New York City, George P. Way, Detroit, Mich., and George H. Wilson, Louisville, Ky., (Jour. A. M. A., Nov. 1, 1913, p. 1645).

The Friedmann Cure.—After studying the cases inoculated by Dr. Friedmann at Montreal, Ottawa, Toronto and London, Ontario, a committee of the Canadian Association for the Prevention of Tuberculosis has reported unfavorably on the treatment. (Jour. A. M. A., Nov. 1, 1913, p. 1648).

Trypsogen.—Besides exploiting a clay poultice, "Antithermoline", the G. W. Carnrick Company appears to be chiefly concerned in the promotion of "internal secretion" specialties. Thus it markets the diabetes, "Trypsogen" tablets, said to contain "the enzyme of the islands of Langerhans with the tryptic and amylolytic ferments of the pancreas" along with gold bromid and arsenic bromid; Secretogen Elixir, said to be "prepared from gastric secretion obtained from the pyloric antrum and pancreatic secretion from the duodenum, combined with the enzymes of the peptic glands, and one-twentieth of one per cent. HCL"; Secretogen Tablets, said to be "prepared from prosecretin and succus entericus obtained from the epithelial cells of the duodenum, combined with pancreatic extract"; Kinazyme, "a preparation of extract of spleen, reinforced with trypsin, amylopsin and calcium lactate." While great claims have been made for Trypsogen and while it has been most widely advertised it is the opinion of the most eminent students of the question that pancreas is not efficacious in diabetes. Trypsogen should be considered as an unscientific shot-gun mixture. When the Council on Pharmacy and Chemistry paid less attention to the therapeutic worth of a proprietary preparation, both Antithermoline and Trypsogen were admitted to New and Nonofficial Remedies. They were dropped some years ago, when the Council revised its rules. (Jour. A. M. A., Nov. 1, 1913, p. 1649).

Radio-Active Waters.—All naturally occurring waters, even rain water, are somewhat radio-active. While the waters of Hot Springs, Ark., have been investigated by the Department of the Interior, this information had been suppressed "for administrative reasons". It is stated only that the waters are "radio-active to a marked degree", a statement which might have emanated from a patent medicine manufacturer. (Jour. A. M. A., Nov. 1, 1913, p. 1649).

"Therapeutic" Names.—Claiming that physicians demand that they be supplied with "a pill for every ill" most pharmaceutical houses supply "Pills Gonorrhea", "Pills Spermatorrhea", "Pills Leukorrhea" "Pills Dysmenorrhea", etc. Therapeutically suggestive names for medicine led to thoughtless use by physicians and to counter-prescribing by druggists. That the use of therapeutic titles is not an economic necessity is illustrated by the fact that E. R. Squibb & Sons are discarding such titles. (Jour. A. M. A., Nov. 1, 1913, p. 1650).

Mouth Washes.—Recent investigations seem to show that adherence of mucin caused decay of the teeth. So-called antiseptic mouth washes and alkaline washes do not remove this mucin and therefore do not prevent decay of the teeth. The vegetable acids such as fruit juices and diluted vinegar are the most successful agents for the removal of mucin. (Jour. A. M. A., Nov. 8, 1913, p. 1718).

Pennyroyal, Tansy and other "Emmenagogue Oils".—An examination of the oils of pennyroyal, tansy, savin, rue, thyme, turpentine and of apiol proves that they have no specific or directly stimulating action whatever on the uterine muscles; on the contrary they prohibit the contraction of the uterus and even paralyze it. If these oils exhibit any emmenagogue or abortifacient action whatever, it is due to a general constitutional poisoning or gastro-intestinal irritation and not to any specific action with the intent for which they are sometimes administered. (Jour. A. M. A., Nov. 8, 1913, p. 1725).

Mouth Washes.—Such polypharmacy as is represented by the complex solutions, official and proprietary, used as mouth washes is nonsense. In them the value of useful ingredients is obscured by the useless shrubbery which surround them. A dash of this and a dash of that in these mouth washes or gargles is simply playing to the galleries. (Jour. A. M. A., Nov. 15, 1913, p. 1812).

The Action of Atophan.—It has been recognized that the administration of Atophan increased the elimination of uric acid and that there was a possibility that a greater production of uric acid is induced by the drug—a result which would scarcely encourage its use in therapy. Recent investigations, however, favor the view that the drug merely stimulates the kidneys to abstract from the blood a greater quantity of the purin end-product than it normally would. (Jour. A. M. A., Nov. 15, 1913, p. 1818).

Baughn's Pellagra Remedy.—A booklet issued for Baughn's Pellagra Remedy, American Compounding Co., Jasper, Alabama, suggests symptoms of all kinds as an indication of pellagra. If you have any of these, the inference is that the "grim spector", pellagra, has you in its grasp. Horror is piled on horror in the most approved "patent medicine" style, reaching as a grand climax a description of "the last stages" and closing with the peroration: "And the last stage, till now—the MAD HOUSE and DEATH". As the exploitation of this nostrum interfered with the attempts of health officers to eradicate pellagra in Alabama, it was analyzed in the A. M. A. Chemical Laboratory. The nostrum comes in two forms, capsules and a powder for external use. The capsules were found to contain charcoal, basic iron sulphate and a little quinine. The powder was composed of common salt and basic iron sulphate. (Jour. A. M. A., Nov. 15, 1913, p. 1828).

Regulin.—Regulin is agar-agar. (N. N. R., 1913, p. 20) to which some cascara preparation has been added. The product at one time was described in the Appendix to New and Nonofficial Remedies as follows: A mixture of agar-agar in a dry form with extract of cascara sagrada representing 15 per cent of an aqueous fluidextract of cascara. (Jour. A. M. A., Nov 15, 1913, p. 1832).

Waterbury's Compound.—Waterbury's Compound—called Waterbury's Metabolized Cod-Liver Oil Compound until the A. M. A. Chemical Laboratory showed it contained practically no cod-liver oil—was one of the proprietary preparations advertised both in "display" form and also in the form of an "original article", in the Army and Navy Medical Record—a fraudulent publication that offered its editorial pages for sale. Physicians are now receiving from the Waterbury Chemical Company, a reprint of what purports to be an editorial from the Army and Navy Medical Record entitled, "One of America's Most Valuable Preparations." The preparation, of course, is "Waterbury's Compound." (Jour. A. M. A., Nov. 15, 1913, p. 1830).

Sensitized Virus-Vaccine.—Besredka asserts that the injection of living germs sensitized in certain ways produces a more substantial im-

munity and greater production of antibodies than the injection of germs killed by heat or in other way. In apes sensitized typhoid bacilli gave absolute protection, causing no fever and no reaction, while killed bacilli failed to protect adequately. As a result of these experiments a number of "sensitized virus-vaccines" have been prepared and the antirabic vaccine used in France is now a sensitized virus. Before the employment of the sensitized typhoid virus-vaccine can be considered, much evidence must be produced that there is no danger of producing typhoid carriers and that this vaccine gives any better protection than the vaccines now in use. Similar objections hold against other vaccines of this kind and at present the obstacle to the use of such living germs for protective purposes would seem to be quite impassable. (Jour. A. M. A., Nov. 15, 1913, p. 1814).

Berledets.—This is an anti-fat remedy sold under the claim that dieting and exercise are unnecessary, but the directions for which recommends moderation in diet and free exercise. Examination in the A. M. A. Chemical Laboratory showed the nostrum to consist of tablets, each containing about 9 grains boric acid, along with corn starch and milk sugar. It is evident that Berledets will cure obesity only by seriously interfering with digestion. (Jour. A. M. A., Nov. 22, 1913, p. 1917).

The Morley Ear-Phone.—The Morley Invisible Ear-Phone, Morley Company, Philadelphia, Pa., is nothing more or less than the old, well-known Toynbee artificial drum-head. It consists of a circular piece of oiled silk about one-quarter inch in diameter, through the center of which a piece of silk thread has been passed, for the purpose of holding the oiled silk in position. A small piece of flexible tubing comes with it to aid in inserting the device in the ear. The indiscriminate sale of a device of this sort, especially at exorbitant prices and under fraudulent claims, is not merely an injury to the purse, but a distinct menace to the health of the deaf. (Jour. A. M. A., Nov. 22, 1913, p. 1919).

Veroform Germicide Omitted from N. N. R.—Veroform Germicide is described in New and Nonofficial Remedies, 1913. It is a formaldehyde soap solution, containing 20 per cent of formaldehyde. The report of the U. S. Public Health Service on commercial disinfectants having shown Veroform Germicide to have a phenol co-efficient of but 0.43, the manufacturers of the preparation were asked to present evidence to justify the term "germicide" in the name and the claim that it has more bactericidal effect than phenol. As the Veroform Co. produced no evidence to substantiate the questioned claims, the Council on Pharmacy and Chemistry voted to omit the preparation from New and Nonofficial Remedies. (Jour. A. M. A., Nov. 22, 1913, p. 1920).

Pulmonol.—Pulmonol is a consumption "cure" put out by the Pulmonol Chemical Co., New York. As always in the case of consumption "cures", the testimonials issued may be divided into two classes, those who really had tuberculosis and those who did not have it. Investigation of some of the testimonials given some time ago, generally show that those who relied on the nostrum are dead while those who got well never had tuberculosis. Examination in the A. M. A. Chemical Laboratory indicated that each fluid ounce of Pulmonol was approximately equivalent to 29 gr. potassium guaiacol sulphonate, 10 gr. of sodium benzoate and 1-24 gr. of strychnine sulphate. (Jour. A. M. A., Nov. 29, 1913, p. 1998).

COMMERCIALISM IN THE PROFESSION.

To The Editor:

Like rivers that ever flow, so literature concerning pathologic tonsils and newly devised methods for their removal advances apace day by day

and year by year with increasing intensity and volume; new technic, new instruments and new arguments in favor of their employment.

The spirit of medicine is to heal and is purely philanthropic. Medical ethics are intended to foster this sentiment for the good of humanity, but is being greatly embarrassed by that less delicate less refined and less soulful but more vulgar, selfish and merciless one of commercialism. This disposition comprises our efficiency. It is a leper upon our ethics and a stain upon our honor. It is hydra-headed and stares with a mesmeric glare into the face of every physician. Brazen and indifferent at will and yet inclined to skulk behind pretended sentiment, concern for affliction, sympathy with suffering, etc., etc. In literature this mercenarism looms forth guised as a longing to be of service to the profession and the public and thus struts it in Wisdom's garb replenishing it's coffers with emoluments of various sorts.

Society suffers from this obliqueness of the profession. Where the virtue that avoids undue publicity and yet secures momentary consideration for fictitious values and how enormous and unjust consequence! Where the ethics in advising operations and therapeusis that could be better dispensed with? What signifies it when a surgeon is said to "operate for everything?" Namely that the motive is more mercenary than philanthropic.

The author is acquainted personally with an ophthalmic surgeon of international reputation who performed upon his colleague for cataract plus six hundred marks (150 dollars) when he knew the eye was already irremedially blind.

Latest light upon appendicitis demonstrates that little risk lies in delaying operation, that a large percentage recover without surgery and that many die under it. Yet in some communities pain in the abdomen leads precipitately to the hospital and the surgeons are busy, while in others where the surgical diathesis is less prominent, as many of this class of patients recover without the surgeon as do the former with him. A profession so scientifically and honorably founded and so responsibly motivated should rise above fads and styles but today the appendix and the tonsil attract almost modish attention while tomorrow perhaps only the poorly informed will favor these then considered unnecessary and mercenary procedures. How many now pack in ice for typhoid or purge and bleed for common ailments?

Is it necessary or advisable generally to remove the faucial tonsils? Is the spectacular display, the psychologic affect and the remunerative response sufficiently therapeutic or laudable reasons? These measures are referred to as scientific, masterful and professional. Yet none are so which fail of the highest good to the greatest number. Are efforts to ascertain wherein lies the pathogenicity of pathologic tonsils and to popularize an expedient which sheds less blood, drains less purses and affords less glory attracting attention? These glands are supposed to serve early childhood and later to lose their utility. The author considers them useful throughout life even when not perfectly physiologic. By supporting and emphasising the function of the pharngeal muscles during deglutition, by their own secretions and their assistance to neighboring glands and by their mechanism they very materially aid digestion. Furthermore their close association with the vocal muscles supports the voice over it's long range. It has been observed that singers who have parted with these organs take on a harshness in their fine tones and reach high notes with more effort and discomfort.

The pathogenicity of the tonsil lies in it's open crypt which houses foreign material and propagates and pours into the blood and lymph

streams pathogenic organisms. These also incite local inflammatory processes which subside with destruction of the crypts. The lining of these infectious foci can be eradicated the lumen permanently closed and every pathogenizing property eliminated by thorough employment of the actual cautery.

This procedure is modest, unassuming and common-place but virtuous, effective and inexpensive. It conserves the physiologic tissue of the gland which no longer acts as a foreign body. Many of its functions are retained, motility, bulk for supporting the muscles of deglutition and voice, softness and freedom from the too close attachment to adjacent muscles whose function would thus be restricted, while part of it's secreting virtues are preserved. Just the contrary obtains in every particular regarding the mass of connective scar tissue which replaces the discarded organ. Practically every case can be relieved in this manner. The process while redounding to the patient's interest is not dreaded and above all it enhances the public's regard for the profession by disabusing it of our too obvious tendency towards commercialism.

PERCY R. WOOD, Marshalltown, Iowa.

Feb. 9th, 1914.

March 6, 1914.

To The Editor:

Both my experience and observation lead me to believe that the athletics of today as carried on in our high schools and colleges is productive of harm to the boys engaging in the strenuous events that are put upon the track. Especially do I believe that the long distance race, above 220 yards, if not even less, is very likely to overstrain the body organs, particularly the heart and lungs, and to cause death at an age much earlier than the good physical development of these athletics would lead us to expect.

I shall appreciate it highly, and will give back to the profession the results of this collective experience of the medical men and women of Iowa, if you will publish this letter asking the profession to report direct to me the results, both of their experience and of their knowledge, of end results of these athletic stunts.

Sincerely yours,

J. W. KIME, Ft. Dodge.

SOCIETY NOTES

March 21st, Dr. Joseph C. Bloodgood of Baltimore, delivered an address before the Des Moines Pathological Society on the Cancer Problem. There was a full attendance of the Pathological Society with numerous invited guests. At exactly 6:30 the Pathological Society with its guests, sat down to an informal dinner, after which the tables were cleared, and Dr. Bloodgood delivered his paper, illustrated by lantern slides. Dr. Bloodgood presented in a very forceful way the problem as it is now understood. We have been struggling along to discover the cause of cancer, what sort of a germ it was, if it was a germ; how it grew, and we have endeavored in every way to discover if there was any law to govern the growth of cancer cells. We have made so little progress in this direction that we are now changing our mode of attack. A certain group of men are looking for means of managing the disease when it has appeared or when suspicious conditions have appeared. There is another group at work upon the scientific problem of the cause of the disease. Dr. Bloodgood belongs to the group that is studying cancer chiefly from a clinical point of view, hoping that by means of a campaign of education among the profession, a campaign of education to the laity, to the importance of securing the

advice of competent medical men when anything on the body out of the normal, that is considering all surface growths, surface markings, tumors, points of ulceration, etc., with a view to early treatment by proper surgical means, and also a careful and judicious consideration of persistent signs of trouble in the abdomen or other interior parts of the body; that the primary essential point is a correct diagnosis, and this diagnosis should be based upon a most careful consideration of the case. When there is serious doubt as to the diagnosis and a mutilating operation is contemplated, a specimen may be secured by cautery for pathological study.

We hope in the the next issue to publish Dr. Bloodgood's article in full together with other contributions from very high authorities on the same allied subjects.

The personal enthusiasm of Dr. Bloodgood and the skillful manner in which he presented the subject left a very strong impression, and we feel that a campaign of this kind will be of very great value to the genreal public.

There were several out of town gentlemen present: Dr. Jepson, of Sioux City, Dr. Saunders of Fort Dodge, Dr. Evans of Fort Dodge, and several others.

BOOK REVIEWS

History of Medicine with Medical Chronology, Bibliographic Data and Test Questions by Fielding H. Garrison, A. B. M. D. Principal Assistant Librarian, Surgeon General's Office, Washington, D. C., Editor of the *Index Medicus*. Octavo of 763 pages with many portraits. W. B. Saunders Company, Philadelphia and London. 1913. Cloth \$6.00 net. Half Morocco \$7.50 net.

This book should be read by every practitioner interested in the literature of his profession.

The author offers in the very beginning the doctrine of the identity of all forms of ancient and primitive medicine alike, in differing only in details. The untutored savage looked upon disease as the work of an evil spirit to be placated by offerings and sacrifice, and so the experience of centuries and the knowledge acquired therefrom brought slow improvement in details. Superstition associated with ignorance of natural phenomena and ignorance of the workings of the animal body made the advancement of scientific medicine probably the slowest of all human knowledge. The author of this book has traced as accurately as possible the evolution of this the most complex of all sciences, through its different stages, beginning with Egyptian medicine, the earliest phases of which were derived from the Brugsch Ebers, and Hearst papyri, and from an inscription on a tomb near the pyramids of Sakarah, the resting place of a celebrated physician who lived 4500 B. C., the earliest known physician. Following comes the "Sumerian and Oriental Medicine", referred to in the Bible, the Talmud and the Rig Veda, on to the Chinese and Japanese medicine. Then comes Greek medicine, the most important period of ancient medicine. The Byzantine Period following the downfall of the Roman Empire from 476-732 A. D., the Mohammedan and Jewish Period (732-1096 A. D.) The Medieval Period (1096-1438). "The Middle Ages"—the period of feudalism and ecclesiasticism, commonly described for servile obeisance to authority with its attending evils of bigotry and cruelty). The dark depressing period of ignorance of superstition of plagues, Black Death, which destroyed 60,000,000 lives and so on.

The Period of the Renaissance, the revival of learning and the reformation from 1438-1600, saw many changes affecting natural and physical science relating more or less to medicine; the translation and print-

ing of the ancient writing. Save advancement in anatomy, the contributions of this period were mainly preparatory; even this may be said of the independent and courageous insurgent Paracelsus Vesalius and Perè.

In the seventeenth century, the great work of Harvey supplemented by that of Malpighi and Leeuwenhoek was the great and definite step in advance, and the new turn given to internal medicine by Thomas Sydenham was followed by a long list of lesser contributors.

The contributions of the eighteenth century were such as to lead the author of this book to designate this period as The Age of Theories and Systems.

Now comes the Modern Period. So many discoveries have come in this period that we cannot stop to mention them.

We have extended this review sufficiently to impress on the reader the character of the work and its value as a contribution to the history of medicine. In the chapter on modern medicine, the reader will find the names and contributions not only of the workers who passed away, but also the men who are still with us and whose work is not yet completed. In addition to the text may be found a very helpful Appendix which includes (1) Medical Chronology, (2) Bibliographic—Notes for Collateral Reading, (3) Index of Personal Names, (4) Index of Subjects.

Reports of the Committee on Inquiry into the Department of Health, Charities, and Bellevue and Allied Hospitals of the city of New York. Approved by the Board of Estimate and Apportionment.

George McAneny, Chairman, President of the Borough of Manhattan.
George Cromwell, President of the Borough of Richnevad.

Investigation and Report Under the Direction of Henry C. Wright.

Section II, Part 2, relates to admission to city homes, (almshouses) and includes a compilation of statistics based on groups of cases; rules for admission to city homes; the value of case histories to determine the right to admission as city dependents. Altogether valuable for the guidance of those having charge of city charities.

Section II, Part 1, relates to aliens, non-residents, and state poor in city institutions.

In the early days of foreign emigration (1769) provision was made for the maintenance of dependent immigrants in the form of a "pest-house."

In 1816-1823 the burden of pauperism began to be appreciated, and in the latter year the report showed 1852 paupers admitted, 835 of whom were foreigners. Beginning with the year 1824 an act was passed placing the burden of the care of immigrant paupers on the steamship authorities. For certain reasons this act did not work well and as the number of diseased immigrants increased out of proportion to the increase in immigration in 1847, an act was passed by the Legislature for the protection of the Port of New York which provided for aid to immigrants for five years after their arrival from a fund created by a small commutation payment for each immigrant. The Commissioners of Immigration created by this act who were responsible for reimbursing the city for the expenses of the different classes of aliens described, in a few years failed in securing this reimbursement to the city and led to a bitter controversy. For the twenty-five years ending with Dec. 31, 1872, commutation money was paid for 5,033,392 alien immigrants at the Port of New York. In 1875 the validity of the New York State Law requiring a bond from the shipping authorities and permitting commutation payments on alien immigrants was brought before the Supreme Court of the United States, and in March 1876 declared unconstitutional. The burden then of their maintenance fell upon the municipal authorities. The burden constantly in-

creasing, Federal aid was solicited, and in 1882 a Federal act provided that a tax of 50 cents on ship owners for each alien passenger landed in the ports of the United States. This tax was discontinued March 3, 1891 when by an act of Congress the office of Superintendent of Immigration was created. From this time on, more and more rigid acts of exclusion were passed until now the burden has been greatly reduced. To show the activities of the Superintendent of Immigration in the exclusion of undesirable aliens, it may be noted that in the year 1912 16,057 individuals were excluded, a smaller number than in the preceding two years.

This short abstract will give an idea of the burdens thrown upon the United States in the past one hundred years and the costly experiments which were made in solving the problem, of caring for a vast number of European defectives and paupers. These two reports contain a vast amount of information touching the matter of providing for the poor in the great centers of population.

The Surgical Clinics of John B. Murphy, M. D. at Mercy Hospital, Chicago, Vol. No. 2, No. 6 (December) Octavo of 186 pages. Illustrated. Philadelphia and London. W. B. Saunders Company. 1913. Published Bi-Monthly. Price per year paper \$8.00, cloth \$12.00.

The first in this number is a resume' on the treatment of tuberculosis of the lung by the production of artificial pneumothrax by injection of nitrogen. Dr. Murphy reviews his own work on this treatment and draws attention to the interest manifested in clinics of Germany. We were also impressed by the enthusiasm shown in the clinics particularly of Munich and Vienna last year. This treatment appears to have been an American treatment, although Carson of Liverpool and Porlanini of Italy had suggested it. It was Murphy of Chicago who gave the treatment a practical application.

In this number is a clinical case of Pyonephrosis with drainage. In discussing this case Dr. Murphy takes occasion to make some remarks on hypernephroma and sarcoma of the kidney.

Ununited Fracture of the Radius, Previously Plated: Transplantation of Bone. Dr. Murphy in this case makes the interesting statement that the "number of non-unions is constantly increasing" and seems to infer that the reason for it is the use of the plaster cast and bone plating, and is quite of the opinion that bone transplantation is much better in non-union than Lane plates, with which we can heartily agree. These fixations materially interfere with callous formation.

The last thirty pages of this number are devoted to the methods of student instruction in Dr. Murphy's clinic.

A Text Book of the Practice of Medicine. Eleventh Edition. Thoroughly Revised. By James M. Anders, M. D., Ph. D. L. L. D., Professor of Medicine and Clinical Medicine, Medico-Chirurgical College, Philadelphia. Octavo of 1335 pages. Fully illustrated. Philadelphia and London. W. B. Saunders Company. 1913. Cloth \$5.50 net. Half Morocco \$7.00 net.

Anders Practice is so well known to general practitioners of medicine as a text book that the reviewer can only announce the appearance of a new edition. The fact that so many editions has been needed to meet the demands shows the appreciation in which the book is held by the profession. Besides a revision of the text, some new subjects have been discussed and some subjects have been rewritten, so this may be regarded as one of the best works on the practice of medicine.

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INFECTIONS FROM GAS BACILLI*

W. W. BOWEN, M. D., Ft. Dodge, Iowa.

Gas in the cellular tissues following severe wounds is a condition not new, yet up to a very few years ago was scarcely mentioned in the works on surgery although imperfect descriptions of it are scattered through the literature as far back as 1853 when Maisonneuve first described its clinical picture. Pirogoff again in 1864 gave what was then an exhaustive study of it, and Salleron reported sixty-five cases seen during the Crimean war. Its bacteriology was investigated by Pasteur who isolated an organism named by him vibron septique. Koch and Gafke about the same time found the bacillus of malignant edema. Other men thought they had discovered still other organisms and gave them different names until there were at least eleven and this together with discrepancies in describing the clinical symptoms kept the whole subject in the direst confusion. Welch of Johns Hopkins straightened this out in 1891. There was a tubercular patient there who had an aortic aneurysm and who developed a general emphysema; from him Professor Welch isolated a bacillus which from its cultural characteristics he called bacillus aerogenes capsulatus. He inoculated animals with it producing emphysema and death, and also found it in other patients, and proved that all patients suffering from gas in the tissues are infected with this organism. The bacillus of malignant edema is not the same and although it produces a similar train of symptoms as the bacillus aerogenes capsulatus it does not produce gas.

The organism is a straight or slightly curved bacillus with rounded or square ends, thicker than the anthrax bacillus and three-sixths microns long inclosed in a capsule. It is single, in pairs and

*Read before the Iowa State Medical Society, 1913.

again in threads. It is an obligate anaerobe although Lanier succeeded in cultivating it in the presence of oxygen and Lahey cultivated it after it had been exposed to air for twenty-four hours. It is non-motile, non-liquifying and ordinarily non-spore forming, but under some conditions does form spores. It grows in ordinary media in the absence of oxygen at room temperature but better at 37 C. It is readily stained by ordinary stains and retains Gram's stain. It is widely distributed, its natural habitat being the soil and the intestinal tract of both man and animals. To be sure it is not present in the soil everywhere nor in the intestinal tract of all people. Kendall and Smith examined the stools of two hundred and thirty-one children in the Boston Floating Hospital and found the bacillus twenty-two times or about ten per cent. Of these twenty-two cases, six were normal, two had thin watery stools and fourteen had blood and mucus in the stools.

The gas produced by the organism is hydrogen 64.3, carbon dioxide 27.6, nitrogen 8.1 and it burns with a pale blue flame.

Etiology. A large majority of the cases of gas infection follow injuries and especially severe crushing injuries where the muscles are mashed and dirt is ground into the wound, and nearly half of them have followed compound fractures. A number of cases have followed the infusion of salt solution and the bacilli have been recovered from salt, out of sixty-four cases collected by Stewart, three were due to this cause and two to simple hypodermic injection and six after operations and strangely enough most of these (three cases) were upon the urethra and one upon the kidney. Quite a number have followed operations upon the perineum and rectum and this is not surprising in as much as the organism is so frequently an inhabitant of the intestinal tract. Also one might expect to find it not infrequently after operations on the intestine yet cases following such operations are rare, and why there is such a showing of cases on the urinary tract where the organism has never been found in a living subject is one of the vagaries of the disease.

Symptoms: At the first appearance of the disease the wound acquires a watery blood tinged discharge but not pus. There is a rise of temperature and pulse the same as in an ordinary infection with or without rigors then bubbles or blebs of gas appear in the wound, these blebs are covered by skin and are first dark red then shading into purple or green and finally become blue and are quite suggestive of bacillus aerogenes capsulatus infection. Small bubbles of gas also appear in the discharge. About the time of the appearance of the blebs, emphysema begins in the wound and tissue around it and spreads in every direction. The spread is by continuity of tissue and not by lymph nor blood channels and the margin of the emphysema can be easily marked by the eye and by palpation. There is no limit to which it may extend so that the entire body may become emphysematous. The gas advances in the tissues along the

lines of the least resistance, and hard tissue, bone, cartilage and fascia form effective dams against it so it fills the subcutaneous tissue and burrows between the muscles splitting them from one another to considerable extent so that perceptible quantities of gas may collect here and there between them. Under the skin it spreads more evenly and as before stated may spread all over the body.

When the portion of the body injured is an extremity, gangrene is liable to appear in a few days, this is partly due to the mangling of tissues by the causative injury.

Some persons claim to be able to determine a peculiar odor which is described as a "sweetish foul" odor but, however that may be, none of us are likely to see enough cases to learn to diagnose the disease by the odor.

Pain is a variable symptom, according to some writers it is out of all proportion to the injury, and others as Blake and Lahey claim that pain is almost entirely absent.

Nausea and vomiting are almost always absent unless late in the process and delirium likewise is a late symptom and generally ushers in a fatal termination.

After death, the cadaver becomes enormously distended with gas.

The infection spreads by direct continuity of tissue, therefore there is no lymphangitis with its accompanying red streaks nor any enlargement of lymph glands. If these symptoms are present, they show that there is a mixed infection. Also the infection not spreading by the general circulation, there is no metastasis.

There are two types of the infection, the acute fulminating type just described, and the delayed type. The acute fulminating type appears in from eight to forty-eight hours from the injury, the milder or delayed appears later from forty-eight hours to six days or even later. Two cases in Bellevue Hospital developed in thirteen and fourteen days after the injury. This type is much milder. There is some fever 100 to 102.5° with a pulse of 100-120. There is no forming of blebs. The patient presents the appearance of one with a mild pus infection until the emphysema appears under the skin. Such cases properly treated, nearly all recover, but some linger along for some weeks and finally die.

The prognosis of gas bacillus infection is remarkably bad, the death rate of the cases so far reported average forty-eight per cent and it is claimed that none recover without treatment. There is some difference of opinion as to which is the most serious, the pure infections with gas bacillus or the mixed infections. One would naturally expect the mixed infections to be most serious, but this is not always so.

Treatment: The treatment is first of all prophylactic, that means every care to prevent infection during all operations, for any operation may be followed by this form of infection. Compound

fractures and especially those with much contusion and laceration of tissues must be cleaned well and irrigated and left open and dressed very light or not at all and must not be encased in plaster casts. If the limb injured is placed in plaster, a fenestrum must be left larger than the wound and this packed lightly with gauze. All attempts at plating or wiring such bones must be delayed until all danger of infection is over.

After emphysema appears, active treatment must be employed at once and the earlier the better. Practically the only treatment advised a few years ago was amputation well above the injury, but now it appears that unless the member is injured so that its recovery and future usefulness are impossible it is not necessary always to remove it. One has to meet simply this problem, the bacillus is an anaerobe therefore to get oxygen into its presence kills it at once, and any method by which this may be done will be efficient. The simplest and the one which must not be neglected is to get the wound open and let air into it, remove all stitches and lay the wound wide open. If it is an abdominal wound have no fear of hernia but open it down to the peritoneum and attend to the hernia afterward. After the wound is opened, irrigate at frequent intervals with water, with antiseptic solutions or probably better than all with peroxide. If amputation is determined upon, it must be done early and high up, but it is not always necessary nor even possible to go above the emphysema. The bacilli are numerous in the near vicinity of the wound, but rapidly become thinner as the distance from the wound increases and the gas spreads through the tissues faster than the bacillus, therefore it is often safe to amputate through emphysematous tissue. No attempt must be made to close the amputation wound but it must be left wide open, packed lightly with gauze.

In some cases where amputation is not advisable, long multiple incisions may be made and followed by cleansing and frequent irrigation with antiseptics or peroxide and in cases not gangrenous, this treatment seems to be as effective as amputation. Oxygen from a gas tank may be thrown constantly into the wound or the limb may be submerged in antiseptic solutions.

I have seen in our own practice three cases. The first of these developed in a way not heretofore described to my knowledge, that is, in the fourth week of a severe case of typhoid fever. The emphysema commenced on the abdomen and spread throughout the body and was followed in three days by death.

The second case followed a compound comminuted fracture of the leg with crushing and grinding of the soft tissue and terminated fatally in three days.

The third was a lady thirty-five years old upon whom a hysterectomy was performed October 30th, 1912. Following the operation there was no shock, the next morning felt good and looked well. She ran practically no temperature up until November 3rd, four

days after the operation when her temperature went up to 102.5°, pulse 120 but she still felt well. The following morning, five days after her operation, temperature was 101°, pulse 110, she had no pain and felt comparatively well except that she had a headache, the abdominal wound was examined and was apparently clean, probes were introduced into it in several directions but no pus secured. On the evening of November 4th, it was discovered that she had an emphysema over the abdomen extending a little way above the ribs about two and one-half inches, the vagina was examined by means of a Sims speculum, the wound in the vagina where the hysterectomy had occurred looked slightly necrotic but was in fairly good condition. There was a free discharge from the vagina of thin brownish yellow fluid containing air bubbles, irrigations were started immediately using peroxide which was introduced into the vagina through the Sims' speculum by means of a small glass syringe, this was repeated every hour, we believing it to be an infection of the bacillus aerogeneus capsulatus and that the peroxide would have a good effect on this organism. The abdominal wound was opened up the entire distance and a moderate quantity of brownish yellow fluid escaped which contained air bubbles. The following morning Dr. Albert of Iowa City made a bacteriological examination from both the abdominal wound and the vagina and the bacillus aerogeneus capsulatus was found in pure culture. On November 6th, her temperature became normal, the vaginal irrigations with peroxide were continued until November 7th, eight days after the operation. The abdominal wound was wide open but now looks healthy and the discharge has practically ceased, following this her recovery was without event. About a week later the wound was drawn together with silk worm gut using a number of figure of eight sutures and healed kindly and the patient left the hospital well.

Discussion

Dr. G. G. Cottam, Sioux Falls: Two years ago I saw a man who had a compound fracture of the leg, in which the gas bacillus infection took place. He was doing some carpenter work, about six miles from town, and after falling a few feet sustained a compound fracture. He got on a horse and rode to town. The fracture was treated by his family physician, with careful precaution as to asepsis. A few days after, a discoloration of the extremity below the fracture set in and a peculiar crackling of the subcutaneous tissues could be detected on applying pressure. Upon seeing it, I felt sure it was a case of gas bacillus infection, and as soon as arrangements could be made I proceeded to do an amputation higher up. I think I did it through the lower third of the femur. The man did remarkably well for a short time, for two or three weeks, and I was beginning to be quite hopeful of recovery, when, without any warning he developed pulmonary symptoms.

Dr. William Edgar Sanders, Des Moines: My personal experience with gas bacillus infections is limited to two cases.

One of these was an acute attack of appendicitis which was operated on the third day, and developed emphysema of the abdominal parietes within a day or two and died one week after the operation.

The other case occurred in the practice of Prof. Bloodgood of the Johns Hopkins Hospital, Baltimore, following an operation for aneurysm of the popliteal artery.

Infection became manifest on the following day, and necessitated amputation.

The organism was isolated in this case by inoculation of a rabbit, the animal being killed within a few hours and its body incubated for several hours in an incubator, thereby becoming enormously emphysematous.

This organism is not necessarily pathogenic for laboratory animals, so in order to prove its specificity it is necessary to kill the animal soon after inoculation, and incubate the body for the development of the characteristic gaseous distention of the tissues.

The organism is a strict anaerobe, and will not develop in the circulating blood because of the presence of oxygen.

Dr. Bowen: There have been less than 400 cases of this disease reported in the United States. This demonstrates to us how little we observe things. I have seen three, Dr. Cottam one, and Dr. Sanders two. This seems to indicate that the cases are not nearly as uncommon as statistics would tend to show. For instance, Jackson's membrane was supposed to be a rarity until the thing was discussed.

SUBSEQUENT OBSERVATIONS ON THE TREATMENT OF TRI-FACIAL NEURALGIA

FRANK A. ELY, M. D., Des Moines.

Some five or six years ago several neurological and surgical clinicians introduced in this country the deep injection method of treating trifacial neuralgia, using a solution of 1 per cent cocaine in 80 per cent alcohol as the medicament for injection; this solution being introduced by means of a long blunt needle into the two lower branches of the fifth nerve as they emerge from the base of the skull.

After considerable clinical observation, the value of this treatment more and more attracted the attention of neurologists, surgeons and dentists, and today it stands as the treatment of selection in this painful affection.

In the Journal of the Iowa State Medical Society, under date of Aug. 15, 1912, the writer published a report of fourteen cases of trifacial neuralgia treated by the deep injection method, in which an attempt was made to give a true colorless account of the degree of success met with in treating this painful and refractory disease. In the months that have elapsed since the aforesaid article was published, opportunity has been afforded the writer for more extensive observation, and in view of the fact that this method of treatment means so much to many suffering individuals, it seems proper to follow up the first report by a subsequent one which will, he thinks, accentuate in the mind of the reader the undoubted value of the therapy.

Time and space will hardly justify a detailed rehearsal of all the cases reported in Series I, or those mentioned in the first report, but the writer wishes to comment briefly on such cases of this series as shall convey to the mind of the reader a proper conception of the difficulties dealt with and results obtained in those cases which have been under observation for several years. In commenting upon the

following cases the numbers used will refer to the cases in their numerical order as they have come under the writer's care, and the term "Series I" will refer to those reported in his first article; while the term "Series II" will refer to those cases treated since his first report was published.

Case I of Series I is that of a man some sixty years of age, who for seven or eight years had suffered from severe paroxysms of pain in the entire distribution of the three branches of the right fifth nerve. So severe had this pain been that he had been incapacitated for work because of the inanition occasioned by loss of sleep and insufficient food, it being impossible for him to masticate without bringing on pain. In this case all three branches had to be treated at first in order to bring the pain under subjection, something like six injections being required: one for the supra-orbital, three for the middle and two for the lower. The first period of immunity from pain lasted about eight months, during which time the patient resumed work; and from that time to this (a period of six years) he has lost but a few days from his work on account of pain or illness. He has gained about thirty pounds in weight and is a continuous advocate of alcohol if it be taken in a hypodermatic highball. It has been necessary several times to re-inject both the middle and lower branches, the shortest period of pain immunity having been six months, the longest twelve months.

Case V of Series I is that of a Norwegian miner fifty-eight years of age, who for five years had suffered terribly from pain in the distribution of the two lower branches of the fifth nerve on the right side. Several peripheral operations had been done in this case, with only temporary relief. After four injections—two respectively for each of the painful branches—a high degree of relief from pain was obtained, although the result was not ideal. This patient has returned from time to time for re-injection, it seeming to be impossible to so subjugate the offending branches as to bring about a period of pain immunity of more than six months. At one time after producing almost complete relief from pain on the right side, the two lower branches on the left developed pain, and these also had to be injected. Notwithstanding the stubbornness of this case, the writer has been able to keep the patient at work most of the time, and it has now been seven months since the last series of injections were made, at which time the deep injections were reinforced by peripheral ones made into the infraorbital and mental foramina.

Case VII. of Series I, is that of a man aged fifty-four, of very plethoric habit, whose painful experience had extended over a period of about ten years. In this instance the two lower branches on the right side were involved. This case was difficult to handle. The patient had received one or two injections at Rochester, Minn., and thought that he was relieved, but the pain returned with great severity one week after his last treatment. He then fell into the writ-

er's hands, and after a series of four or five injections for each of the two lower branches, making ten injections in all, it occurred to the operator that there might possibly be something wrong with his technic. He therefore referred the case to a neurologist whose experience had been more extended in this line of work, and he in turn, after four attempts, passed the patient on to still another, who added his therapeutic contribution, and after this the pain gradually subsided and remained in abeyance for about a year. This history is especially valuable for the instruction of the reader, because it embodies some features which one is bound to encounter if he is called upon to treat any number of cases. In the first place, this patient had a very broad head, the bi-parietal diameter being almost as great as the fronto-occipital; a type of cranium which the writer always dreads to see in a patient applying for treatment, because out of his series of some twenty-six cases the only ones which have proven to be unusually refractory to treatment have been those in which the patient possessed this cranial configuration. In the second place, this case passed through the hands of four competent operators, none of whom can say with assurance that he gave any relief. Some twenty injections in all were given, and none of them seemed to reach the right anatomical location. The subsequent history of this case the writer does not know.

Case IX of Series I is that of a woman of very plethoric habit aged sixty-two, whose pain was located in the right, middle and lower branches. Four injections to each of the offending branches brought about marked relief, which continued over a period of six months, when both had to be reinjected. A marked hyperemia of the right side of the soft palate and the gums of the upper jaw on the same side resulted, and the writer fearing serious sloughing, hesitated to again inject, when, after a period of six months, the pain again returned. Owing to the fact that the original severity of the pain was never duplicated, this patient was allowed to go without treatment for considerably over a year, during which time she lived in reasonable comfort, but recently being in the office on another errand, the writer suggested that she allow him to inject the lower branch as it emerges from the mental foramen of the inferior maxilla. This was done, the needle passing readily a half inch downward, inward and forward into the nerve canal. Fifteen drops of alcohol were injected, and the treatment was followed by immediate and extensive numbness in the gums of the lower jaw on that side, and of the lower lip and chin. Three weeks subsequent to this treatment word was received that the remnant of pain which had always lingered after the last series of deep injections was entirely relieved and the patient perfectly comfortable.

This patient has always suffered from slight ankylosis or stiffness of the lower jaw since her first deep injections, but it has caused her no great inconvenience.

Case XII. of Series I, was that of a man aged sixty-seven, who had been terribly mutilated by external or peripheral operations. The right middle and lower branches were affected, and required three injections each before the pain was relieved. Pain immunity lasted some six months, when re-injections became necessary, after which the immunity lasted about the same length of time. A third series of injections was then given with indifferent results, the patient became discouraged, and I do not know what has become of him.

Case XIII. of Series I, is that of a man aged fifty-two, who had been injected by a master hand in Chicago for pain in the left middle and lower branches. Fair results were obtained from this treatment. Four months later he applied to the writer for treatment. One injection to each branch relieved the pain for about eight months, when he returned for re-injection. This time the results of the treatment were most gratifying. Extensive analgesia was obtained in the superficial distribution of both branches, and a pain immunity of over two years' duration was the result. As additional evidence of this patient's freedom from discomfort, it may be said that during this two-year interval he was married.

Of the cases treated since publishing our first report, only those will be mentioned which will bring out some characteristic feature pertaining to the treatment and its results.

Cases I and II of Series II are those of two women aged sixty-five and forty-two respectively, both of whom came to the writer suffering from severe pain in the distribution of the two lower branches on the left side, and both of whom have been kept comfortable for periods varying from three to twelve months without any difficulty whatever. These cases the writer would classify as ordinary, easily-treated cases, yet of a type in which the results are not brilliant, though gratifying.

Case III of Series II is that of a plethoric, broad-headed woman aged thirty-five, who came suffering with severe pain in the left middle and lower branches. This patient proved to be an unusually difficult one to treat. After a series of eight injections—four respectively for each offending branch—there was a short cessation of the paroxysms of pain, but it soon returned with redoubled ferocity. The patient was then referred by the writer to one of his neurological friends in Chicago, but she fell into the hands of one of the quacks of Quackville, who amputated her cervix, dilated her rectum, and incidentally forgot to tie an artery which he cut in amputating the cervix, which artery proceeded to bleed almost to the point of exsanguinating the patient. Blood-letting is undoubtedly good treatment for some things, but it did not prove to be a success in trifacial neuralgia, and the patient is still suffering intense pain, while she sticks faithfully to a chiropractic who manipulates her vertebrae with the same ease with which a devout sister tells the beads of her rosary. The writer has suggested the peripheral injec-

tions into the foramina, a measure which he did not attempt during the first series of treatments, and which he believes in these stubborn cases will often bring about gratifying results.

Case IV of Series II is that of a physician, age forty-five, whose pain was confined to the right lower and middle branches. In this case again the broad, round head had to be dealt with. After several treatments at short intervals over a period of three months, relief from pain was obtained, and at the last report, some six months after the last treatment, there was no pain.

Case VIII of Series II is that of a physician, aged forty-five, who has suffered for a number of years from neuralgia of the two left lower branches. Both branches were injected at one sitting with a resulting ideal analgesia in the superficial distribution of both branches. At the last report, some six months after treatment, he was entirely free from pain.

It was not the intention of the writer in making these reports to tire the reader with the operative technic used in this treatment. For these details he would refer those interested to the articles by Dr. H. T. Patrick of Chicago which have appeared in the Journal of the A. M. A. But in concluding this report an attempt will be made to sum up the special points of interest pertaining to the treatment as it has been applied in our experience to twenty-six cases, extending over a period of six years.

(1) No serious accident has ever occurred to any of the patients treated. One has had a rather protracted stiffness or partial ankylosis of the temporo-maxillary articulation on the side injected. One had a marked extravasation of blood into the soft tissues of the face, which cleared up within a few days. One elderly lady had a slight sloughing of the gums of the upper jaw on the side injected which healed promptly in about two weeks. Aside from this there have been no disagreeable happenings to report. Several operators have reported paralyses of the muscles of the eye after injecting the middle branch, due to the alcohol touching the third or sixth nerves at the posterior portion of the orbit. This accident has never happened in the writer's experience, but in those cases in which it has happened the paralyses have been transient.

(2) The writer has profited, in treating his later cases, from the mistakes previously made:

(a) In not reinforcing his treatment by subsequent injections after the pain has been relieved;

(b) In going too deep in those cases in which the nerves were not touched easily at the depth prescribed in the regular technic.

By reinjecting the offending branches, even after the pain is relieved, the pain immunity may be greatly lengthened. By injecting at a lesser depth, good results have been obtained in cases where the writer was inclined to insert the needle deeper and deeper in his earlier efforts.

(3) By using a small caliber, rigid needle, with a sharper point than that of the one first used, and by the free use superficially of a one per cent novocain solution, the painfulness of the treatment has been greatly minimized.

(4) By passing an ordinary hypodermic needle into the infra-orbital or mental foramina, it has been found practicable and comparatively easy to inject alcohol into the terminal portions of the middle and lower branches, and thereby greatly supplement the benefit obtained by the deep injections. In two cases the pain has been relieved by these injections alone, without resorting to the deep ones.

(5) In a general way it may be said that the period of pain immunity seems to become more prolonged in those cases that have been treated several times.

(6) Previous treatments do not seem to render subsequent ones more difficult.

(7) Gasserian ganglion operations should never be done until every effort has been made, both by peripheral and deep injections, to relieve the pain.

(8) The writer can heartily recommend the treatment as safe, sane and successful, even though it cannot be said to be a cure.

MYOCARDITIS*

W. L. DOWNING, M. D., Moulton.

The term "Myocarditis" seems a rather unfortunate one, is misleading, because it indicates that there is a primary inflammatory state of the cardiac muscle fibres, whereas the changes in the fibres are secondary to inflammatory affections of the interstitial tissues of the heart and its bloodvessels, which thereby cause atrophic and degenerative changes in the muscle.

Hare says:—"It is probable the process is at no time truly inflammatory, but rather one in which diminished blood supply causes atrophy of the muscle, followed by a substitutive fibrosis." The authors speak of several forms of so called myocarditis, the most common being a slow, low grade, inflammatory change,— "chronic interstitial myocarditis," manifested by wasting of muscle fibres, the interstitial tissues undergoing simultaneous change into fibrous or fibro-elastic; this being the only form of which I know anything is the one to which I shall call your attention in this paper.

Etiology. In much the greater percentage of cases the chronic form results from pathological changes in the coronary arteries. These vessels suffer from obliterative arteritis, undergo atheromatous change, or may become plugged by an embolus or thrombus, the lesions resulting differ widely, but all impair greatly the heart's

*Read before the Iowa State Medical Society, 1913.

usefulness. All such conditions, lessen the lumen of the vessels, and decrease the nutrition of the heart so that there results an overgrowth of interstitial tissue with consequent atrophy of muscle fibres.

In some instances chronic myocarditis is the result of inflammatory processes in the pericardium and endocardium by extension to the heart muscle itself. It sometimes results from syphilis. It may occur in connection with typhus and typhoid fever.

It sometimes occurs in connection with the vascular changes of senility.

Rheumatism may cause it independently of any other cardiac disease. Nephritis seems to be rather frequent cause. Rather more frequent in males than females.

Diagnosis and symptoms. I have no trouble in recognizing a pericarditis, once the heart sac is fairly full of fluid, with its increased area of flatness, distant muffled heart sounds, lessened impulse to chest wall, etc., but to say that we have a pericarditis or an endocarditis and that neither in a given case involves the heart muscle, or that we have a myocarditis simply, the pericardium and endocardium both being free, is beyond my comprehension. The clinical diagnosis rests mainly on the exclusion of other causes than myocarditis for the abnormal condition of the heart.

Chronic diffuse myocarditis presents the history of ataxia of the heart common to other cardiac diseases, and while the most common variety, it is from a clinical standpoint the most important, and although its diagnosis is difficult, the reasonably careful observer will be able to recognize it sufficiently early that its treatment will be of some avail. Most of my cases have presented the picture of a non-compensated valvular lesion. Some of them showed failure of the lesser circulation as the first symptom. Exhaustion on exertion or excitement, accompanied by shortness of breath, palpitation, and precordial pain, have been symptoms more or less prominent.

These attacks at first transient, later become more frequent and prolonged. If anything, more likely to occur in the evening or at night, and sometimes resemble greatly true asthmatic paroxysms. Such patients will, however, be more quiet than with bronchial asthma, because every change of position increases the distress.

Blood pressure is always high during these attacks, and in some instances the attacks seem due to vascular contraction through excitement of the vaso-motor system. Pulmonary congestion and edema may be present.

If you will pardon me just here, I should like to mention briefly, one of my cases which showed so completely the asthmatic symptoms, as to be mistaken for asthma proper, by two very good men. Patient, a male of 47 years, a hard working farmer, had been a sufferer for six months from attacks of palpitation and shortness of

breath, thought to be due to stomach disturbances with presence of considerable gas. One evening after supper, in the absence of his family physician, I was hastily summoned to his bedside one-half mile away. Found him sitting on edge of bed with elbows resting on his knees, was covered with perspiration,—pulse of high tension, very fast and intermitted occasionally, face and lips cyanotic, breathing with great difficulty, inspiration prolonged, expiration much shorter, and with every 3rd or 4th expiratory act he threw out a sort of puff, which escaped through both nose and mouth, large quantities of frothy slightly pink edematous fluid. Upon auscultation both lungs were found absolutely full of this fluid, with rales so loud that the heart beats could not be heard.

Both patient and friends were very anxious, lest every moment be his last. A moment's thought suggested the idea of a nerve sedative, one that would overcome the great vaso-motor contraction and act as an emetic, thus aiding in clearing out the edematous fluid. Happily apomorphia came fleeting before me and proved to be just the thing.

In five or six hours the lungs were clear, leaving not the slightest trace of the former direful state. Three such attacks happened to this man in next fourteen months up to the time of his death, each lasting from one to five hours, but left him as well as usual.

A moment more with reference to symptoms:

There may be perceptible enlargement of the heart, but not always. Apex beat is weak and diffused, the pulse, always rapid, later becomes irregular, may be intermittent, and changes pace frequently without apparent cause. Second heart sound is weak compared with volume of first. Heart sounds vary in quality, a few may be loud while a few that follow will be weak and indistinct.

Such sudden variation in rhythm and character is said to be more marked in diffuse chronic myocarditis than in any condition giving rise to heart muscle failure. Some of my cases had leakage of the valves when first observed by me, mitral mostly, and I have long since come to feel, that all of them will have insufficiency, sooner or later, if only they live long enough.

Duration is rather variable, and since its advent is so insidious, its limitations are hard to fix, the cases usually being rather far advanced before coming under observation. These patients do not recover, this seems impossible, some dying with unexpected suddenness, while others with all evidences of severe involvement of heart muscle, living long periods. In past fifteen years I have rarely been without one of these unfortunates, having recognized fifteen or twenty cases in my own practice, I am sure, most of which I have cared for to the end, three or four months to seven or eight years. I am aware the authors say three or four months to three years, but I fell absolutely sure from my own records that as much as five to

eight years elapsed from the diagnosis to the date of the death in several instances.

Treatment. From what has already been said one would readily infer that we do not expect to accomplish much in the way of treatment.

Since the pathological conditions present in a case have already given rise to a variable amount of damage to the heart, that we cannot undo, and this too, before the patient comes under observation, our only hope is that by regulating the habits of life and manner of living, by watching the kidneys, caring for the digestion, and preventing cardiac strain, we may be able to increase the comforts and prolong considerably the life of the patient.

As a rule we do not need to warn these patients against undue physical exercise, because they learn quite early what it does for them. They should be taught early the advantages of the recumbent posture, that it means rest to the heart, conservation of strength, etc. After a few heavy meals with overloading of the stomach and pressure against the heart from accumulation of gases, you will usually be saved any further reference to this organ, because they are apt to take too little meals, if anything.

I shall not attempt to tell you gentlemen just what particular heart sedative or tonic you must use, or would be best in a given case, since you alone are on the ground, and supposed to know existing conditions, and from these you must decide for yourself. There is a little feature of which I wish to speak before closing, and that is the foolish, indiscriminate, routine use of digitalis in these heart cases. About three months ago I saw one of these cases twenty miles away from my town with a gentleman in the profession who usually knew quite well what he had in hand. The patient, a female, aged fifty-two, had been a sufferer from symptoms referable to the heart for three years. My examination revealed the following:—A patient profoundly comatose and cyanotic, there having been three hard convulsions in eighteen hours just past. Heart perceptibly enlarged, pulse one hundred and forty-two, apex beat weak, diffused, and displaced to the left. Mitral regurgitant murmur, eyelids and face suffused, hypostatic congestion in base of right lung, left pleural cavity partially filled with fluid, some abdominal ascites, extremities badly edematous, as was also the abdominal walls, liver was choked and stomach congested. Microscope showed granular and hyaline casts.

Anyone could see readily enough, that this woman was nearing the verge of dissolution. The strangest part about it was, that she was getting hypodermics of digitaline and strychnine every four hours. Just why her physician had not seen, and understood too, that the heart in this case was already distended, too much entirely, to respond to any sort of medicine, I do not know.

Naturally enough, there was only one thing to do for this pa-

tient, ease the burden under which her heart was already striving,—So we set to work, giving her 1-10 gr. doses mild chloride every thirty minutes until she had two grs. calomel, and followed with salines every thirty to sixty minutes, and by the end of twenty-four hours there had been eighteen large profusely watery movements of the bowels, for the most part unconsciously. We had probably depleted her of three gallons of the fluids in which she was drowning;—to put it otherwise, we had relieved her congested stomach, purged her liver and colon, reduced the pressure within the ventricles and renal veins. As a consequence the heart was beating more slowly and strongly, and now that the load had been distributed somewhat,—much of it having been cast off,—the ventricles had some room in which to play.

Just here by the careful use of digitalis, we were able to get some response on the part of the heart chambers, and our patient in three days was conscious, fairly comfortable, and ready to smile. She went on improving, or rather remained fairly comfortable for five or six weeks, and although a constant sufferer she still lives.

Two months ago I was hastily summoned to a farm home one and one-half miles away. As I entered the patient's room he said, "Doe, I'm better now, but I'm glad you've come, I've had mighty bad pain here," putting his hand over epigastrium and precordial area. His face was pale, anxious, and covered with perspiration; the pulse slow, small, tense, and intermitted occasionally. I lifted his head slightly, giving him a dram of bromides. As I lowered the head to the pillow he said, "Doe, I'm awfully dizzy, I'm going all around, I'm gone." He straightened himself out in one terrible tonic convulsive seizure, gasping once or twice and was dead.

To me this case was new. I was not sure for a moment, whether his breathing was arrested by disease or controlled by his own will power. Ten days before, this man, seventy-one years of age had a similar attack which greatly distressed, and made him quite anxious, but was not seen by a physician. Both followed active exercise, shoveling snow.

In the interval this man came to my office. There was no perceptible enlargement of the heart, although his vessels showed considerable sclerosis. Otherwise he was plump, well rounded out, five feet, eight inches tall, one hundred and ninety pounds, and a perfect type of health.

Perhaps most of you have already a diagnosis on your tongues end. To me here was an early myocarditis. This man must have died of angina pectoris,—the only one I ever saw I'm sure. I give it to you for what it is worth, since it shows another of these cases from a slightly different angle.

Discussion

A Member: I wish to refer to one case. I was called one winter night in consultation with another doctor. It was about 14 miles distant,

and the going was rather slow. After I got there, I found everything over, and everybody was much surprised. I did not know the physician. He was a new man and was very much worried about the outcome, the patient dying so suddenly. The man had not had a physician, and this was the first time he got sick in the night time. The physician gave him a hypodermic of H. M. C. and very shortly after he died. The people were inclined to blame him, but I am satisfied it was one of those cases of myocarditis where the end came suddenly and no one was to blame. It is well to keep these cases in mind and prepare the people for the sudden end which often comes.

CHRONIC INTERSTITIAL NEPHRITIS*

H. M. VINSON, M. D., Ottumwa.

The prevalence and importance of chronic interstitial nephritis has at last been recognized by the profession in general. While we have made giant strides in bacteriology, the treatment of tuberculosis, the study and application of serums and vaccines, surgery, etc., we have given too little time to the prevention and alleviation of a disease which sends so many of our men in public life, our best business men, and many members of our own profession to the physical junk pile, shortens their life and limits their usefulness. This disease comes on insidiously and often is not recognized until our patient has tried to pass a life insurance examination or until from some defect of vision the ocellist makes a diagnosis of the disease already past its incipency.

Pathologically, the red granular kidney of chronic interstitial nephritis may be a separate pathological entity but rarely is found as such. The arterio-sclerotic form and the degenerated contracted kidney which follows the large white kidney of parenchymatous disease may all be found together.

The essential pathology is the occurrence of fibrous tissue between the tubules causing, by contracting fibrous tissue a destruction of them by pressure atrophy. A similar condition occurs around the glomeruli to a greater or less extent. Accompanying this is hypertrophy of the left ventricle of heart with the occurrence of arterio sclerosis in the peripheral arteries the arteriosclerosis usually but not necessarily belonging to the picture.

The frequency with which it attacks our men in public life who are over worked and who under exercise is startling. The nervous strain of "saving the country," and making codes of ethics for physicians as some of our prominent legislatures have to do, certainly brings on chronic nephritis.

The other great cause is toxemia and may be classed as chemical, metabolic, and infectious. Under chemical we find first, alcohol which is a protoplasm poison and circulates in the blood as such. Alcohol has the reputation of producing fibrous tissue in the liver and other organs besides the kidney. Lead is a common cause of the produc-

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tion of nephritis and workers in paint mills are frequently attacked by the disease. The too long continued use of hexamethylene has produced it according to some observers. The production of formaldehyde in the urine and its irritating qualities is given as a cause.

Poor digestion, which does not completely change food into easily absorbed products and produce toxines which can not be neutralized by the liver are factors in producing fibrous tissue in the kidney. The same result is obtained by food which has been absorbed and not all utilized by the cells. Toxic products as a result of putrefaction in the lower bowel, and which are absorbed and circulate in the blood as unneutralized toxines have from their result irritation of especially vulnerable tissues and the production of scar tissue. Syphilis by its production of arteriosclerosis and its accompanying formation of scar tissue is a great cause of chronic nephritis. This disease is often unsuspected until apoplexy or pulmonary edema takes our patient off suddenly. We can put down no one set of symptoms which appear in all of our cases.

These patients often come to us complaining of being run down, weak and unable to do as much work as common. They are often anemic and complain of loss of appetite. They may or may not have noticed anything wrong about the urine. On the other hand we may have men past forty-five who have to get up at night to urinate frequently, and who are a little short of breath on exertion. Our physical examination and urinary findings often shows the man to be a victim of the diseases under discussion. Instead of enlarged prostate we find contracted kidney. Often an intractable bleeding at the nose or bronchial hemorrhage makes us suspicious of some serious trouble existing. A dizziness often recurring in patients past middle age may be the only thing that arouses our suspicions until by taking the blood pressure we find it above normal.

Our physical findings are usually as follows: Hypertrophy of left ventricle, sometimes very marked. Temporal arteries and pulsations of the same are plainly visible. Sclerosis in peripherals may or may not be distinctly seen. Heart tones, second aortic loud and snappy, if we see the case before dilatation of the heart is present, eyesight often failing the oculist reports retinitis due to hemorrhage into retina or tortuous retinal arteries.

Urine, increased in greatly specific gravity from 1003 to 1010, serum albumin usually present.

Microscopically—hyaline casts, perhaps some blood cells are present, blood pressure in these cases is usually high, 175 or over. This cannot be estimated by the touch, but has to be taken a sphygmomanometer of which there are many good ones in the market. Dr. Littig has a home-made one which serves as good as any and is very accurate. This apparatus should be in every doctors grip and is as much a part of his equipment as a stethoscope or a

thermometer. Startling surprises are in store for the doctor who takes time to take blood pressures as a routine.

The theories of rise in blood pressure are two.

1st. Cohnheim thought it was due to the fact that as the blood has to circulate through the kidneys every nine minutes, if part of the tubes are destroyed the pressure has to be raised to allow the same amount of blood to be pumped through them in the same length of time.

2d. The other theory is that a substance is supplied by the adrenal gland that raises the blood pressure. In all these cases the adrenal gland is hypertrophied the cortical more than the medullary portion. It is from the medullary that we get adrenaline.

Digestive symptoms and headaches may be marked. Chronic bronchitis recurs in these cases every winter, and the pressure due to the coughing is often the cause of increased headache.

Dropsy is not frequent unless this is a dilated heart. Apoplexy often closes the picture.

How are we to treat these cases, we cannot cure them. Edebohl advocated decapsulation of the kidneys in these cases. The adhesions following to give the kidney relief by making new vascular connections. A few successful cases reported.

We can tell our patients to lead a fairly quiet life, abstain from alcohol, tobacco, excess of meat and things hard to digest, to take a fair amount of exercise to burn up what fuel they take in, excretion going and avoid sudden chilling of body. But our main treatment should be along preventive lines.

Our life insurance companies find this one of their greatest problems and already are sending out literature on the subject. Five years ago we were not compelled to record blood pressure on our examination blanks, but now we are as the great life insurance companies are recognizing the increase of this disease, and are doing all they can to promote longevity.

We tell our female patients to be examined every six months or one year during the menopause, but how about our men. Let us educate them also to be examined as often following their period of greatest sexual activity, or their change of life.

They take to this examination very kindly if you can convince them that you can lengthen their lives and increase their business usefulness. Teach them how to live. Get them out of the office regularly and have them take regularly some light exercise. When country clubs are so numerous and Y. M. C. A. gymnasiums are so near, this athletic work becomes a pleasure.

Teach them that the glutton and the drunkard live short lives, of the two overeating takes off more people than overdrinking. Horseback riding is useful to the patient who can not avail himself of a gymnasium or a golf course.

Tell the farmer who has always worked hard and who has rent-

ed the farm and moved to town to take life easy, that he must have some light employment both summer and winter, and that he must stop taking tonics all winter long to bolster up his appetite, when two meals would be better than three.

Tell every man over forty-five whose waist measure is greater than his chest measure he is eating too little food and taking too little exercise. If you don't burn up the fuel well you are going to have a lot of clinkers, and by burning up the food well fewer toxins are formed and less work thrown on the excretory organs.

Alcohol must be eliminated entirely. Moderation is the motto in all things.

Medical treatment is useful at times. Laxative to keep the bowels open, nitrite if the blood pressure gets too high, although in some cases high pressure keeps these people living. If blood pressure is lowered some of these people become uremic and effusions occur.

A tepid sponge bath should be given every day to keep the skin going. A certain amount of drinking water keeps the kidneys and bowels flushed, but excessive drinking should be condemned.

The treatment of uremia does not vary in this disease from that in the acute form. Sweating, purging with salines and liquid diet, with diuretics if necessary often carry these patients along for awhile until it recurs or some more serious symptoms sets in.

Discussion

Dr. Frank M. Fuller, Keokuk: I only want to emphasize one point which I think has not been referred to sufficiently, and that is testing for urea. We have, very often, it is true, the absence of albumen. I believe, however, if we examined 24 hours specimens, repeat the examinations at frequent intervals, and use the proper test, in almost all of these cases we will find an amount of albumen.

In regard to examinations, I think we should educate our men to have frequent examinations. I do not believe in too frequent examinations. We examine our elevators and boilers to make sure they are in good condition. We should educate our patients, particularly men of activity and life, to take these examination tests, the same as they would be examined for life insurance.

I think arteriosclerosis or fibrosis is more general than just in the kidneys, and with proper examination we will often find that we are trying to treat a serious general condition with a tonic of some kind.

Dr. Bannister, Ottumwa: The causes of arteriosclerosis are very well set forth in the paper. I think, however, he left out a very important part, the element of heredity. When we come to study the disease, we find in many cases the underlying cause of heredity.

A Member: The essayist brought out the fact, that most of the cases we get are advanced cases, and that we have to deal with advanced cases as a rule.

One thing I want to speak of is the matter of elimination, keeping it up thoroughly, and also the diet. This is of more aid than almost anything else. These cases of high blood pressure, in every instance, have a cause for it, and in very many of them I think it is due to sclerosis of the arteries of the kidneys.

The doctor says, in many cases we do not find albumen, and the patient will die just the same. I think the treatment by elimination will do more good than anything else.

Dr. H. W. Vinson: I will in reply take up one or two things; As to frequency of examination, I have several business men who want to be examined about every six months. They say they do not want to get old before their time.

On the subject of elimination, it is a good deal better to prevent toxins from forming than to eliminate them after they have formed. I think we have all been eating too much. I think we could all live on about half as much as we do. During the Japanese-Russian war the Japs lived on rice almost exclusively, and there never were better fighters in the world. I want to make a plea for less eating.

PNEUMATIC RUPTURE OF THE BOWEL*

J. D. BLYTHING, M. D., AND P. A. BENDIXEN, M. D., Davenport.

In presenting this subject; pneumatic rupture of the bowel to you, we want to state that this is only a preliminary report. We have, at the present time, a number of cases, but as our histories in some cases are incomplete, we do not care to present them to you at this time. We will, however, in the near future, tabulate our cases and report them.

Pneumatic rupture of the bowel is a new form of industrial accident, seems to be on the increase, and probably will continue to be so in the near future.

The condition is one in which the bowel is inflated through the rectum by means of air under high pressure with a resulting rupture of the bowel intra-abdominally. Very little is to be found in the literature on this subject, the most complete article is that of Dr. E. Wyllis Andrews on "Pneumatic Rupture of the Intestine, A New Type of Industrial Accident," reported in the January, 1911, issue of *Surgery, Gynecology & Obstetrics*.

In this article Dr. Andrews reports a case of his own and gives a collection of fifteen other cases.

The cause of the accident: We note in all cases of pneumatic rupture of the bowel that it is the result of initiations, hazing or carelessness on the part of the workmen with the compressed air hose. It is very evident that this practical joking must be common and it is very probable that many other accidents have happened but have not been reported. In all of the cases reported the air had to pass through one or more layers of cloth to enter the anus, yet with this obstruction it did not seem to delay its destructive and deadly work. In a number of cases reported the air nozzle was at least an inch or more from the body. Why is it then that we have such a destructive force in the application of compressed air? This may be explained in the following way: First, that 100 to 125 pounds of air will form a solid column of air several inches in advance of the hose or nozzle, which would act almost as a solid body forcing open the sphincter muscles. Second, Dr. Andrews has pointed out that the anatomical arrangement of the perineum is such as to facilitate concentration of air pressure at the anal orifice.

This anatomical condition is a peculiar formation of the pelvic floor, forming a funnel whose apex is at the anus, the confined air

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expanding in this funnel will force the gut open without having the end of the pipe accurately adjusted to the anus. With the involuntary contraction of the levator and sphincter muscles a space between the buttocks would be narrowed and the funnel deepened thus confining the escaping air laterally and leading it more surely into the bowel.

The following is a brief abstract from Dr. Andrews' article in regard to the amount of pressure required to rupture the intestines.

With an air guage and tank of compressed air he showed that the ordinary bursting point of a dog or ox intestine was from six to ten pounds. The human intestine showed about the same bursting point when removed from the body. Whether or not the strength would be greater in the living body we are unable to state, but there probably would be a slight difference. Dr. Andrews also tested numerous specimens of stomach, bladder and intestines obtained at meat shops, and from dog experiments and found that none of the specimens were capable of bearing over 12 1-2 pounds, the fresh specimens bursting at 7 or 8 pounds. Senn, experimenting on the cadaver in a case of enteritis, found that the diseased bowel ruptured at 11-2 pounds.

Pathology. Several of the cases reported by Dr. Andrews were cases of minor injuries about the rectum, but in nearly all of the cases the pathological condition is found intra-abdominal, and consists of hemorrhages in the serosa, lacerations of the serosa and muscular coats with a bulging of the mucus membrane; or we may have a complete rupture of the bowel through the serosa, muscular coat and mucus membrane. In some instances the parietal peritoneum may be ruptured. The sigmoid, as a rule, shows the greatest amount of trauma; the descending colon, the transverse colon, the cecum and the small intestines together with the mesentery may be affected. The amount of injury to the bowel will be directly in proportion to the force of the air applied, and as to whether or not the bowel is full or empty. Air may be found in the free peritoneal cavity; hemorrhages and ecchymoses of the bowel are to be expected.

Symptoms. The symptoms in cases of pneumatic rupture will depend somewhat upon the amount of internal injury, but the following are some of the characteristic signs.

First. Pain, usually immediate, severe and continuous.

Second. The face is usually sallow and somewhat cyanotic; the facial expression anxious and pinched.

Third. The abdomen is enormously distended; skin tense; percussion note tympanitic. Little, if any, abdominal breathing present, depending, on the amount of distention; patient may or may not be conscious. Temperature is usually normal in the early stages but in later stages the temperature may be high on account of the absorption of blood or due to a local or general peritonitis. Respiration is increased from 18 to 40 per minute; the pulse rate is in-

creased and its volume varies in proportion to the amount of internal hemorrhage and the degree of shock. Nausea and vomiting are common symptoms. The legs are usually flexed on the thigh and the thigh on the abdomen.

Diagnosis. The diagnosis in these cases ought to be made without a history, for the reason that sometime we may be confronted with a case where the patient is unconscious or is unable to speak the English language. The diagnostic points that we should bear in mind are: the enormously distended abdomen, severe and continuous pain in the abdomen, rapid breathing and in extreme cases the emphysema of the surrounding structures. The differential diagnosis should be from ilius, perforation, ulcer or wounds, fractures of the ribs or injury to the air passage, causing emphysema.

Prognosis. The mortality rate in these cases is very high, and the following statistics will give you some idea in regard to the death rate. Cases not operated upon show a recovery of 8.6 per cent; mortality or deaths resulting 39.1 per cent; in those cases operated upon, recovery is 21 per cent, and the fatality is 30.4 per cent. This high mortality rate is probably due to the failure in so many instances to make an early diagnosis and an early operation possible.

Treatment. The conservative treatment in these cases should be eliminated. It may be necessary, in some cases, to institute a preliminary treatment to combat shock. Where extreme distention is present, the preliminary introduction of a trocar through the abdominal wall under aseptic precautions may permit the escape of sufficient air from the free abdominal cavity to facilitate later operative procedures. No attempt should be made to wash out the bowel prior to operation. The condition should be treated as a rupture of the intestines from blows and the earliest possible exploratory operation should be done.

The lacerations and perforations should be sutured and, if large amount of fecal material is present, in the free peritoneal cavity, a drainage tube should be inserted.

Post operative treatment. Patient should be placed in the Fowler position. Normal saline by the drop method be given per rectum and all further treatment directed toward meeting the symptoms as they arise.

A parietic condition of the bowel may be expected, the rectal tube and turpentine or glycerin enemas will be found useful in relieving the patient from the oppression of gas.

In conclusion. We want to impress upon you the following: 1st, that compressed air is a very universal necessity in modern industries; 2d, a strong warning verbally and by prominently displayed signs should be given each foreman and employe against all practical joking or hazing with the air nozzle; 3d, that air rushing from a compressed air hose can enter the body through the clothing and

cause serious laceration of the bowel, proving fatal in many instances; 4th, that the diagnosis of this accident should be made from the physical signs alone; 5th, that the sigmoid is the most common seat of injury; and 6th, to impress upon you the following motto of the Central Safety Committee of Railroads: "To boost for safety first, not safety second, third or last, but always and everywhere, safety first."

Discussion

Dr. L. W. Littig, Davenport: The important thing about this class of accidents, is to spread the knowledge that they are apt to occur in establishments where compressed air is used. Some of these patients are killed by fellow workmen in brushing clothing or playing with the nozzle. An apparatus so dangerous as this should be explained to the workmen. I think that every establishment where this compressed air is used should educate the men as to the danger. It is more dangerous than a pistol, because its danger is not understood. Men do not realize the fact that compressed air is so potent. This paper ought to find its way into the public press, so that the heads of these establishments may understand its danger.

In regard to this Davenport case, I was consulted by the county attorney, who asked me what I thought of it. I told him he could not show that the man (defendant) had any criminal intent, and that a fellow workman could not be held responsible, but that the head of the institution should be held responsible for introducing such a dangerous apparatus without having its danger fully explained to the workmen.

Dr. W. W. Bowen, Rort Dodge: I rise to report a case I saw a month or so ago, of pneumatic rupture of the bowel, brought about by a man working on the railroad, under a culvert. They took the supports of the culvert away and it gradually settled down on him. He was in a squatting position, so that the thighs and knees were forced up on the abdomen. This force was so great it brought about a rupture of the ileum. He died in 24 hours. Autopsy showed a rupture of the ileum.

Dr. Walter E. Scott, Adel: I want to ask what the amount of minimum pressure is that would produce an injury of this sort? Also, whether or not the vacuum cleaner would not be good treatment.

A Member: I had the pleasure of reading the report of Dr. Andrews of Chicago. After the report he made a little animal experimentation. He came to the conclusion that it was difficult to get a clear conception as to how much pressure was necessary to rupture the human intestine, judging from the work on a dog. The muscular coat of the intestine of the dog is much stronger than it is in the human being, for the simple reason that the character of the food that the dog has to digest is responsible for this extra coat. The subject is a very interesting one to me.

Dr. Bendixen: A gentleman to my side here asked me whether this was a postmortem report. I want to say, the man left the hospital in 14 days. He had no temperature during that entire 14 days. His symptoms subsided the following morning. The only reason we can attribute to this is the fact that we got into the abdominal cavity an hour and a half after the accident.

As to the case in regard to the man in a squatting position, I am not convinced that this was a case of pneumatic rupture of the bowel, if the pressure of the beam fell over his shoulder, I do not think you could class it as a pneumatic rupture.

I am asked as to the amount of pressure required in cases where these ruptures occur. In all these cases where they have pneumatic air pressure, there is a dial in the engine giving the exact number of pounds of air any time during the day. There is a case reported occurring in the American Steel Car & Foundry Co., which happened in January, 1912, where the dial showed 80 pounds of pressure. That is the least pressure we have been able to find in any case, but from the experiments, from twelve to fifteen pounds seems sufficient.

DIAGNOSIS AND TREATMENT OF FRACTURES INVOLVING THE JOINT*

A. P. STONER, M. D., Des Moines.

Before the days of Potts and Colles, fractures involving a joint were of the grossest character, if at all recognized as such. Especially were fractures involving the lower extremity of the fibula or radius, usually treated as dislocations of the ankle and wrist joints respectively. The true condition not having been recognized in those days, the results of the treatment must have been very unsatisfactory. Even with the aid of the present day appliances for diagnosis and treatment, fractures into or about the joints require the utmost skill and serious consideration of the surgeon. If for no other reason than that the ever increasing liability of legal actions being brought, in consequence of imperfect results, anatomical, or functional, which may follow, renders necessary the use of every possible precaution in diagnosing and treating fractures involving the joint.

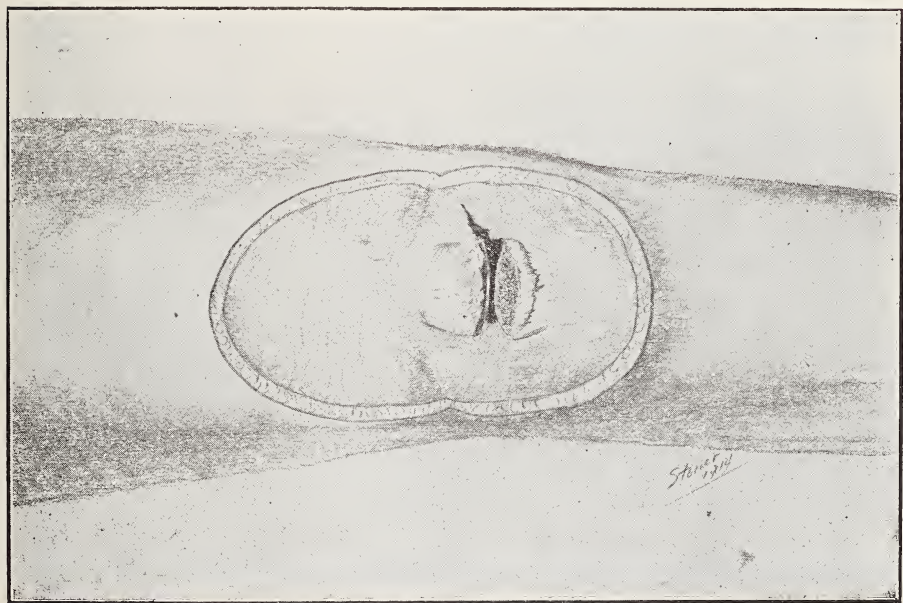
Conditions which render the treatment of joint fractures especially important, are:—

1. The relation of the fragments to each other are often such as to render their replacement and retention in their anatomical relations very difficult, and many times impossible without their exposure and the application of sutures or some other mechanical means.
2. Hemorrhage into and about the joint.
3. The danger of joint infection, should the fracture be compound.
4. Parts of the aponeurosis, ligaments, fascia, or spiculae of bone are frequently interposed between the fragments.
5. The callus formed during the reparative process often interferes with motion of the joint, and the free movements of tendons, should their sheaths be impinged upon.
6. Restriction of motion, or even complete ankylosis following a joint fracture is a condition always to be feared.

Difficulty in effecting reduction of the fragments and maintaining them in their anatomical relations, are especially to be found at the elbow, shoulder, and hip joints. The fragments may be rotated or greatly displaced by the pull of muscles or ligaments, and it becomes impossible to hold the broken parts together by any position or process of bandaging. The case of intra-condyloid fracture of the humerus herewith shown, was one in which three attempts at reduction, twice under anesthesia, had been made before operation was resorted to. It was put up twice in a right-angle anterior splint, and once in the Jones position; but at no time was reduction effected. The fracture was then exposed through a four inch longitudi-

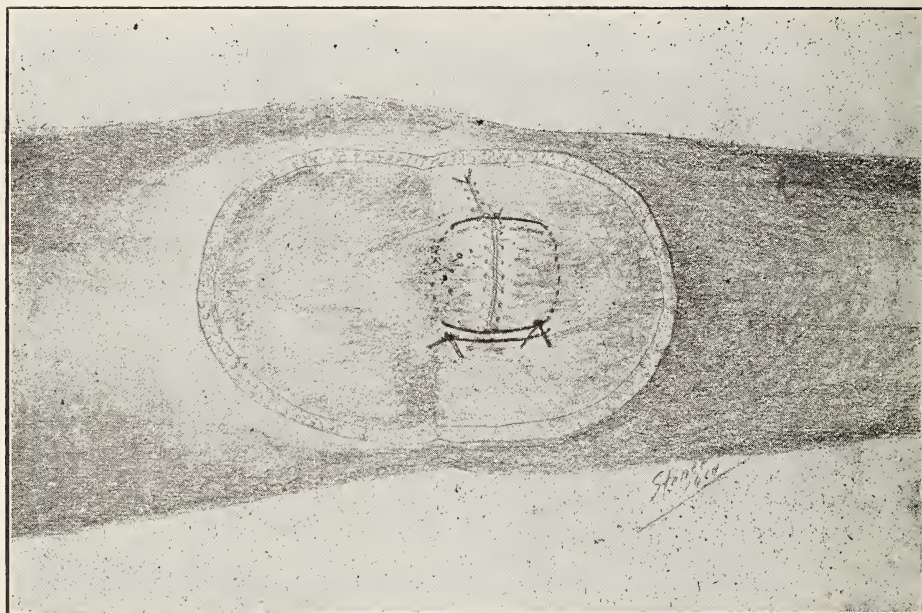
*Read before the Polk County Medical Society, Feb. 24, 1914.

nal incision, the fragments nailed together with a 6 penny wire nail. A very useful joint will follow this procedure. Hemorrhage into a joint is a factor to be considered especially after fracture of the patella. If suturing of the patella by the open method is resorted to the blood clot from between the fragments should be removed. It is not so essential however, that the clot within the joint be removed. In all compound fractures involving the joint, it may be assured that infection has taken place, and that more or less limitation of motion or possibly complete ankylosis may ensue. The immediate nailing, plating, or wiring of the fragments in a compound joint fracture, is scarcely to be considered, except with the understanding that the appliance will later have to be removed. Indeed, in no compound bone fracture is plating advisable until after the infection has been completely eliminated. Fragments of bone are to be united with absorbable sutures, kangaroo tendon, or cat-



gut. Free drainage should be provided, and the limb placed in the most favorable position for subsequent use, should ankylosis ensue. Small spiculae of bone, which under more favorable conditions might be left alone, should be removed. Ruptured aponeurosis, fascia, ligaments etc. if interposed between the fragments, should be taken up and sutured together. In simple transverse, or stellate fractures of the patella one end of the torn aponeurosis patellae is nearly always found covering more or less completely the fractured end of one of the fragments, usually the upper one. True bony union therefore, is seldom if ever accomplished unless the joint be opened and the bone fragments brought together, with suture or other device, after having removed the intervening clots and fringes of fascia. The amount of callus formation is usually in direct ratio to the extent

of displacement of the fragments, and inflammation about the fracture. Its absorption when profuse is usually slow, and in joint fractures, several months may be required in regaining the fullest use of the joint. Opening a joint should never be undertaken except under the strictest aseptic precaution and ideal surgical surroundings; and by one who is alive to the dangers incurred by operating in and about joints. It is to be remembered that the synovial membrane is more susceptible to traumatic insult than that of any other structure. It is able to care for much infection however, so long as it is not traumatized. Murphy experimented on dogs by injecting one half the contents of a syringe containing a virulent pneumococcus culture into one joint, care being taken not to injure the joint. The other half was injected into the opposite joint, at the same time the joint surfaces were traumatized with the point of the syringe needle. No trouble ensued in the joint first injected; in the other however,



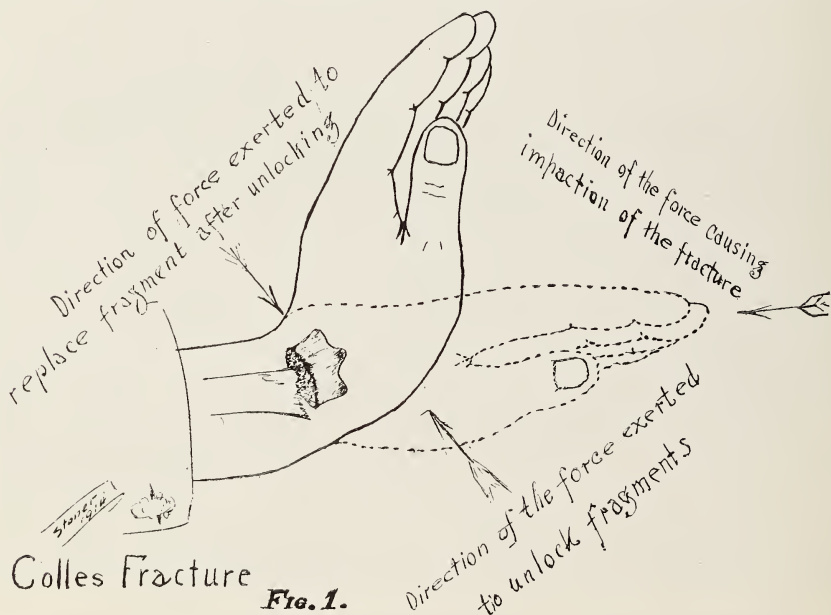
a violent phlegmon always resulted, and the dog invariably died therefrom. In fractures of the patella, good functional results have been obtained by the proper application of adhesive strips and bandages. Most surgeons prefer to wait five to ten days after the occurrence of a joint fracture before operating. If the fracture be compound, the time allowed to lapse should be the shortest possible, consistent with the removal of the patient to a suitable operating room and a thorough preparation of the field. The following described operation for fracture of the patella will suffice for other joint work. The field is washed with ether and painted with 7 per cent iodine. The joint is exposed by a flap incision; blood clots are carefully removed from between the fragments, care being taken not to permit any instrument to come in contact with the joint sur-

face. Neither sponges, nor even the gloved finger, are to be used to remove clots. Indeed, the operation from beginning to end should be done without the finger once coming in contact with the wound. The one important axiom laid down by Mr. Lane, and Dr. Murphy, in bone and joint surgery, is never to allow anything except the instruments which are being used in the operation to come in contact with the wound. The torn ends of the aponeurosis of the patella are isolated and reunited with chromic gut. Any other tears of the adjoining fascia are likewise sutured. This brings the fragments of the bone together in their normal relations. Two ligatures, one behind the other, are now made to encircle the patella through the quadriceps tendon above, and the patellar ligament below, and tied. Kangaroo tendon, or cat-gut are preferable to wire. The skin flap is then united without drainage, the wound dressed, and Buck's extension applied for from 15 to 25 days. The application of extension is another axiom to be remembered. It is applicable to the acute stages in practically all joint injuries, metastatic as well as traumatic. By this means we prevent the joint surfaces from contracting, and injury and erosion of endothelial cells. Passive motion is begun at the end of four weeks. Screws, wire nails, steel plates, ivory pegs, and various kinds of sutures have been used in the operative treatment of fractures in and about the joints. I do not wish to be understood as advocating operative treatment in all joint fractures with fragmentation. It becomes imperative however, when detached fragments of bone cannot properly be adjusted and maintained in their anatomical relation, by the aid of manipulation, position, bandaging, or other retentive apparatus. No surgeon of course, would consider it necessary to open the wrist joint to treat a recent Colles' fracture of the radius. On the other hand it would become absolutely necessary to expose the shoulder joint, to properly treat a fracture of the greater tuberosity of the humerus.

Colles' fracture continues to be productive of bad results, both from anatomical and functional stand points. Most of these cases owe their ill results to the faulty reduction of the fragments. Text books continue to advise traction as the method to be employed in reducing this fracture. Fully 50 per cent of these fractures have been found to be impacted. The very nature of the accident which produces the fracture, namely, falling upon the palm, the hand extended, drives the fragments together at the moment following the displacement of the lower fragment dorsalward. I have seen a surgeon's strength exerted to the utmost in an endeavor to dislodge the impacted fragments of a Colles' fracture, by making traction in a line with the shaft of the radius. Finally, the impaction was readily loosened by sharply extending the hand upon the forearm. The lesser fragment was then easily forced into position by the aid of the thumbs, as extension and traction were continued. See Fig. 1. Once the fragment is in place, there are but few cases that really require

splinting. A well padded posterior board splint which will allow free use of the fingers, is as good as any. An anesthetic is usually required.

No set of principles can entirely govern the surgeon in this work in this field. Whether it be in the treatment of primary fractures of bone, dislocation of joints, or reconstructive joint work; each case must be treated as the exigency demands. In the hands of the competent, careful, and painstaking surgeon; open bone and joint work is a safe procedure. In the hand of the novice, or careless surgeon, it becomes one of the gravest of undertakings. The operation should if possible, be performed in a hospital. The wonderful development of Roentgenography shows that much of the literature relating to sprains and dislocations, has been in error. Goldthwait's investigations have proved the fallacy of the old expression "sprain of the back". "Lumbago" and "sciatica" have likewise met with the same fate. And even "sprained ankle" is no longer recognized as



a fit term by thoughtful surgeons of today. The experimental work on dogs and cadavers by Stewart and Ross, shows the great frequency which sprain-fractures and gross fractures attend joint injuries in general. Supplementing their experimental work, Stewart and Ross have carefully x-rayed all sprains and other joint injuries under their care at the German hospital, Philadelphia. By these means they have found evidences of fracture in nearly all dislocations and sprains, coming under their observation; from the mere chipping off of particles of bone to which ligaments are attached, to that of grosser fractures, splitting of the bone, epiphyseal separation, etc. Where formally it was supposed that ligaments and tendons in joint injuries were divided, these investigators have appar-

ently proved that the bone to which these parts are attached, will more easily give way than the tendon structure itself, causing what they have termed sprain-fracture. They urge therefore, that all dislocations and sprains be skiagraphed, and that pictures be taken in many planes. Whether a fracture is demonstrable or not, they furthermore urge that all such joint injuries be treated as fractures, or sprain-fractures. The points to which I would especially have your attention drawn in discussing this subject, may be summed up as follows:—

1. The absolute necessity for an x-ray examination, in all joint injuries whether fracture is suspected or not. The picture should be taken from two or more angles. If the interruption of the shadows be in doubt, it is well to skiagraph the sound joint of the opposite side for comparison.

2. That recent investigation shows sprain-fractures to be of very frequent occurrence and that such fractures are responsible for many symptoms heretofore attributed to other pathological conditions, such as excessive tissue organization, maladjustment, nerve effectations, etc. Therefore, all fragments should be accurately adjusted, and maintained in their anatomical positions, if necessary by the open method, and a dressing applied that will help to hold the parts firmly in position. Passive motion is to be instituted as early as is consistent with safety as regards refracturing the parts.

INDICATIONS FOR USE OF THE LANE PLATE*

J. W. MARTIN, M. D., Des Moines.

The subject of the treatment of fractures is by no means a settled one. This fact is demonstrated very conclusively to one's mind after looking over the literature on the subject. Since Lane's excellent article on the open treatment of fractures, the profession has taken to this method without discretion, and the results in some cases have been worse than if the closed method had been adhered to.

But the Lane plate, after being used indiscriminately by all classes of surgeons, and after passing through a severe fire of criticism has finally found its rightful place as a mechanical device for the treatment of fracture of the long bones.

Fractures furnish more material for malpractice suits than anything else, due to the difficulty of obtaining the two cardinal requirements in the successful management of all fractures, the anatomical reduction and the retention of the fragments during the process of repair.

Transverse fractures when properly reduced are easily maintained in position. In oblique and multiple fractures, instead of muscular tension favoring retention, the opposite is true, and the

*Read before the Polk County Medical Society, Feb. 24, 1914.

retention of the fragments during the process of repair must be accomplished by other means.

The use of extension, counter-extension, posture, and fixation splints, fortunately accomplished this object in many cases, sufficient to give functional, if not anatomical results. But in certain transverse and many oblique fractures of the long bones, the difficulties encountered and the consequent poor results justify more radical procedure.

It goes without saying that x-ray pictures should be taken of all fractures after they have been reduced, or before, if possible. No fracture should be compounded if it can be properly reduced and kept in reduction. But if the x-ray picture with your clinical experience tells you that you have not a good approximation and if you are unable to maintain anatomical reduction or retention of the fragments, then a Lane plate is indicated, and you are justified in making a simple fracture into an open one.

Operative measures in these cases are to be considered seriously, and the same precaution must be used to eliminate asepsis as in abdominal surgery for infection plays the most important rôle in this class of work, and the fact that a bad union is preferable to an infected fracture should make us hesitate to use the open treatment for a simple fracture, until a careful study of the case and the adoption of every precaution safe-guarding asepsis warrants operation.

Further, if one method increases the danger of infection, certainly it should be discarded in favor of that proven to be less dangerous. I believe there is less danger of infection in the use of the Lane plate than in all external appliances, with screws passing through soft tissues and imbedded in the bone.

The Lane plate is the simplest and most efficient fixation device yet designed. It is practical because

First—it at once relieves the patient from the pain of any movement of the fragments one upon the other.

Second—it frees him from the tension and discomfort due to the extensive extravasation of blood between, and into the tissues.

Third—it shortens the duration of the period during which he is incapacitated from work, since union is practically by first intention, and consequently very rapid and perfect.

Fourth—as a direct mechanical fixation of the fracture it greatly simplifies after treatment.

1st. In all cases, the Lane plate is indicated where there is a functional defect.

2nd. In old cases of non-union or extreme mal-union.

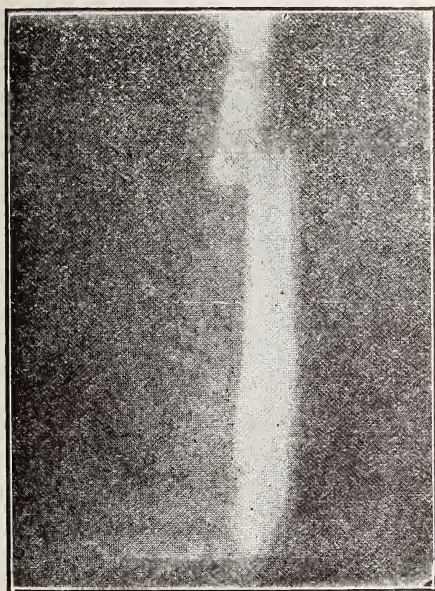
3rd. It is desirable in all fresh open fractures if the shock be passed.

4th. In chronically infected cases in which the bones lie bare, Lane plate should be applied, and wounds, whether suppurating or not, should be packed and allowed to granulate.

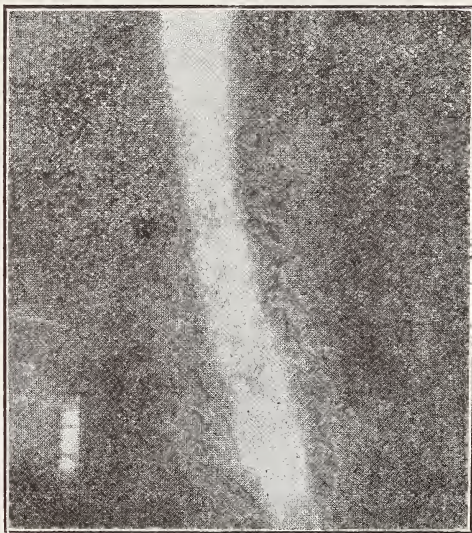
Lane plate is indicated in fractures which are irreducible; i. e., certain serrated fractures, or those in close proximity to joints where defects of the slightest degree are such great importance.

It might be safe to state that all simple fractures of the long bones except those of the humerus and femur, and perhaps clavicle can be properly adjusted and retained in position by the conservative method, namely, splints, extension and other external appliances.

However, certain selected simple fractures, especially of the

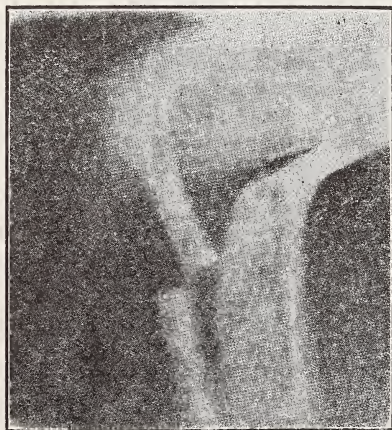


Case A, Radiograph 1.



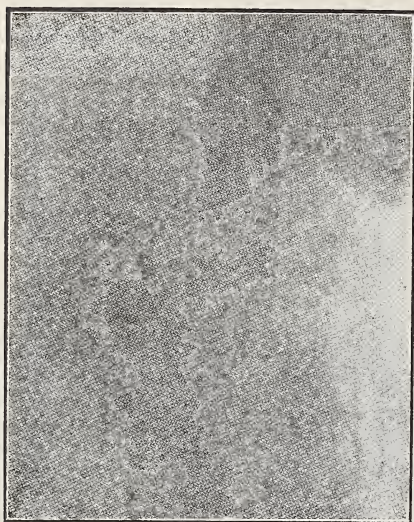
Case A, Radiograph 3.

Case A. Boy age 13 years, transverse fracture of the left femur, junction of upper and middle third. Three unsuccessful attempts were made under ether at reduction before plated. Boy had a perfect result, except that he was allowed to walk too soon which caused a little bowing at seat of fracture.

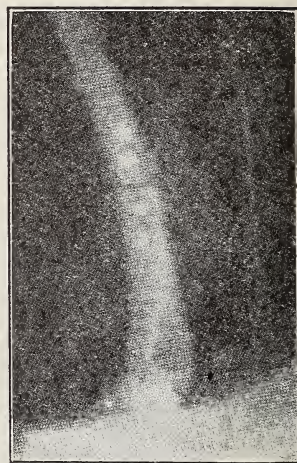


Case B. Man, 44 years old, fracture of left humerus, about five inches above elbow, plated after several attempts of reduction. In the operation the musculo-spiral nerve was fixed in the soft tissues by catgut sutures. Convalescence uneventful. Patient has been able to use his arm at manual labor.

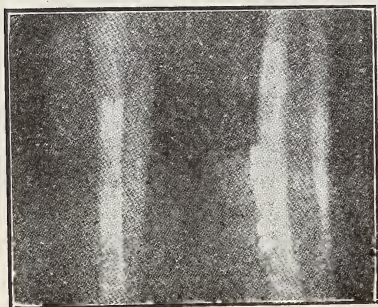
Case B, Radiograph 1.



Case B, Radiograph 2.



Case B, Radiograph 3.



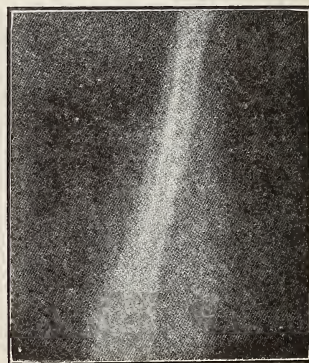
Case C, Radiograph 1.

sected out. The bones scraped, and the results have been good.

Case C. Man, aged 34, compound infected fracture of left radius, with inward displacement of lower fracture, and fracture of ulna without displacement. Arm, forearm and hand were badly swollen from infection of lacerated wound over seat of fracture. Arm was treated in a conservative manner for sometime by moist dressings, etc., but without any results. Lane plate was used. Union by first intention was obtained, but sometime after the patient left the hospital, the signs of infection became manifest and the plates were removed. From time to time the sinus leading down to the seat of fracture would discharge. The sinus was dissected out. The bones scraped, and the results have been good.



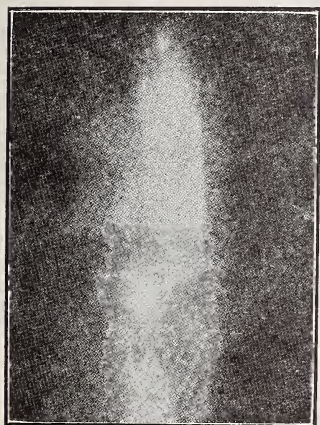
Case C, Radiograph 2.



Case C, Radiograph 3.

humerus and femur must be operated upon, and it is my conviction, that a great majority of such cases, can be more accurately approximated by the Lane plate than any other device now at our demand.

In support of these conclusions, I wish to present the following cases, in which I assisted Dr. S. D. VanMeter of Denver.



Case D, Radiograph 1.



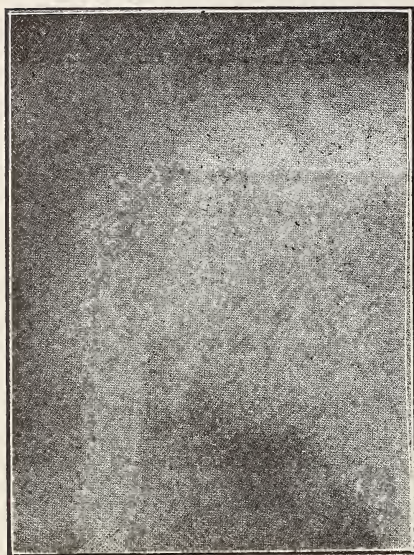
Case D, Radiograph 2.

Case D. Woman, 49 years old. Simple fracture of left femur at lower third, with usual backward displacement of upper end of lower fragment. Reduction was thought to be satisfactory, but radiograph proved this out to be true. After application of plate convalescence was uneventful. The patient walked on the limb nine weeks after operation and measurements show no shortening.



Case D, Radiograph 3.

These cases help illustrate what can be done with Lane plate in clean cases. Unquestionably it is most applicable in this class of fractures, nevertheless in some infected cases this method of treatment can be used to advantage as the immediate, although temporary fixation simplifies the management of the injured member, relieves the pain, and increases the chance of getting control of the infection. In accomplishing these things, however, it must be recognized

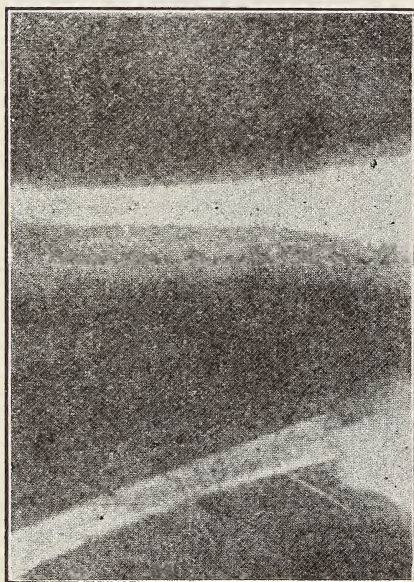


Case E, Radiograph 1.

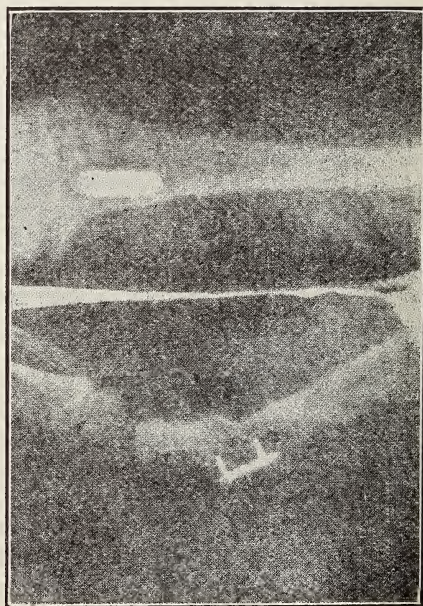


Case E, Radiograph 2.

Case E. Man, aged 32. Comminuted, simple fracture of left humerus, with marked displacement. There was a large hematoma extending into the axilla and on the chest anteriorly and posteriorly. Nine days later we operated, several fragments of bone was removed. Union by first intention. Patient undressed and dressed himself one month after operation.



Case F, Radiograph 1.



Case F, Radiograph 2.

Case F. Lad 6 years old, fell from second story window. Simple fracture of right femur above knee. Has no shortening, and no inconvenience from the plate.

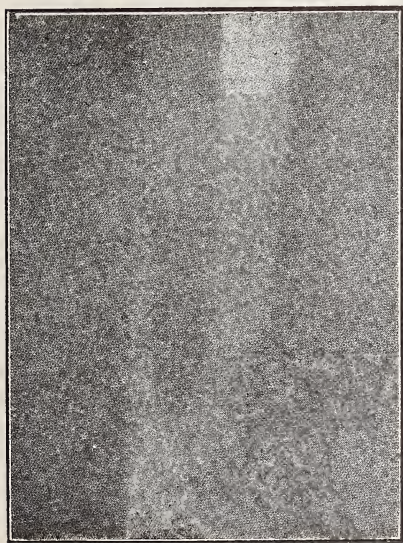


Case G. Radiograph 1.



Case G. Radiograph 2.

Case G. Man aged 33. Simple fracture of neck of humerus involving the shoulder joint. Recovery was uneventful and the patient was able to perform manual labor without inconvenience from his injury.

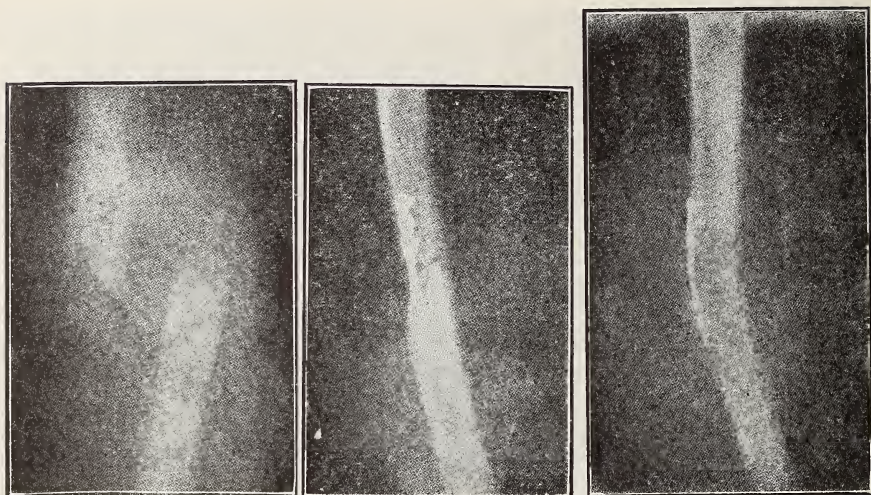


Case H. Radiograph 1.



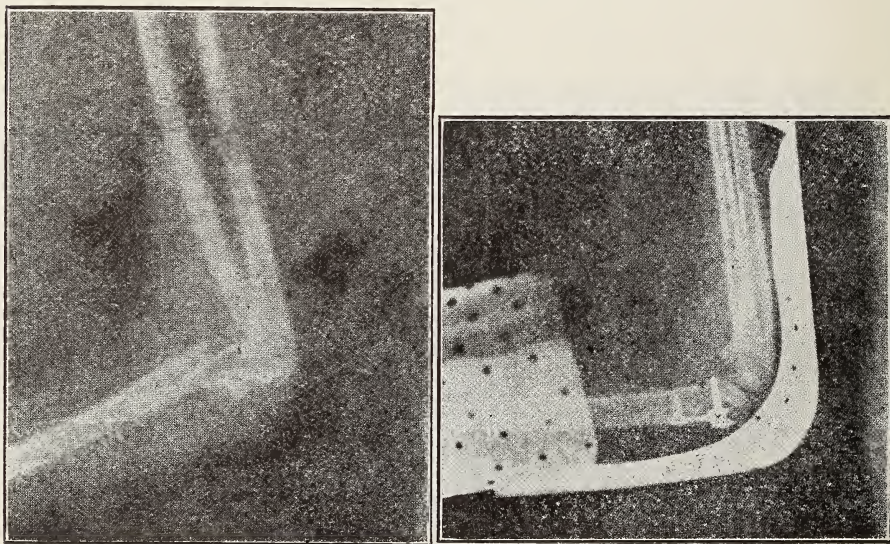
Case H. Radiograph 2.

Case H. Man 29 years old. Simple comminuted fracture of right thigh. Seven weeks after operation through accident plate broke, but eight months later, walked without cane, and has less than one inch shortening.



Case I, Radiograph 1. Case I, Radiograph 2. Case I, Radiograph 3.

Case I. Italian woman, 33 years old, seven and half months pregnant was in a street car accident. Received a double compound fracture of right thigh. One wound in upper end of popliteal space. The other on anterior surface of thigh opposite seat of fracture. Patient persisted in removing her dressings several times during her stay in the hospital which she left before discharged. Picture shows she bent the plates but screws held.



Case J, Radiograph 1.

Case J, Radiograph 3.

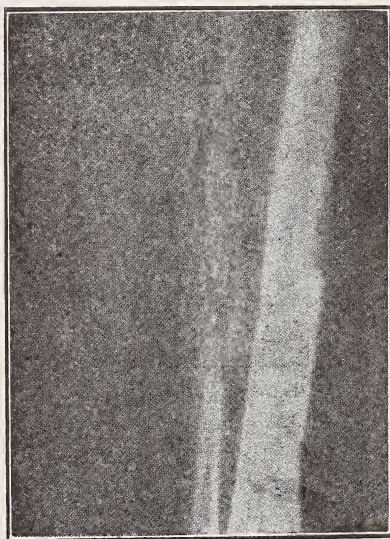
that the screws and drill holes in the presence of infection favor necrosis, and therefore the damage done by the use of the Lane plate in this class of cases must be taken into consideration before the advantage to be gained will justify its use. It must be remembered that these cases are always bad ones and at best liable to be complicated by osteitis and necrosis. Consequently, the use of the



Case J, Radiograph 4.

Case J. Boy, aged 8. Transverse simple fracture above elbow. A Y-plate was used, one screw hold being fixed with wire, owing to thinness of fragment. Wound healed without infection. Plate removed as was close to joint. Results good.

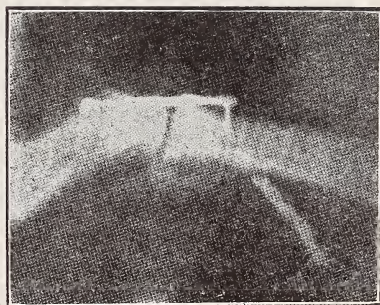
Case K. Aged 38. A Compound fracture of both bones of left leg. Plate removed at the end of seven weeks. Good union, no shortening.



Case K, Radiograph 1.

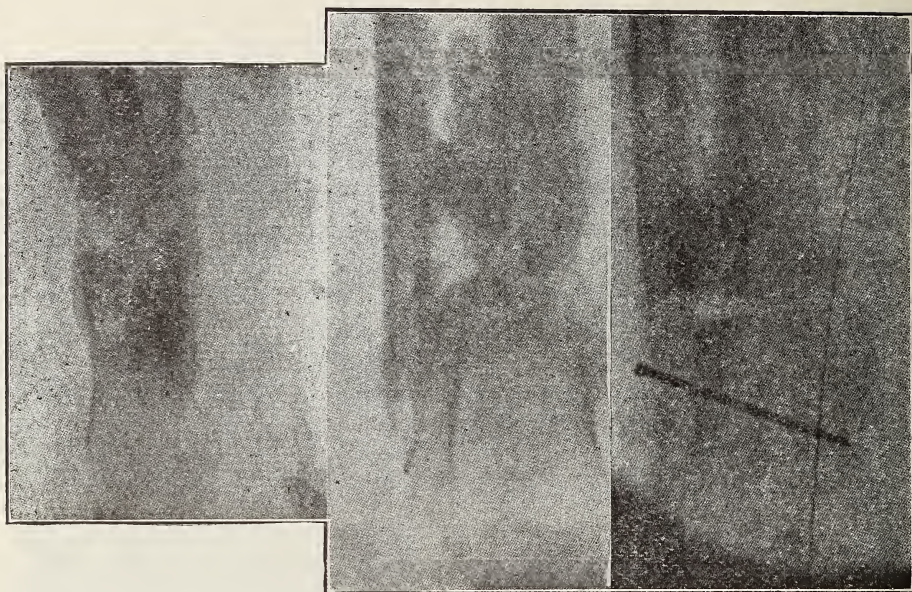


Case L, Radiograph 2.



Case L, Radiograph 1.

Case L. Infected fracture of femur. Had two operations. First a Park-hill clamp. Second, by wire. (You can see the remains.) They were removed and plate applied, but the results were not good.



Case M, Radiograph 1.

Case M, Radiograph 2.

Case M, Radiograph 3.

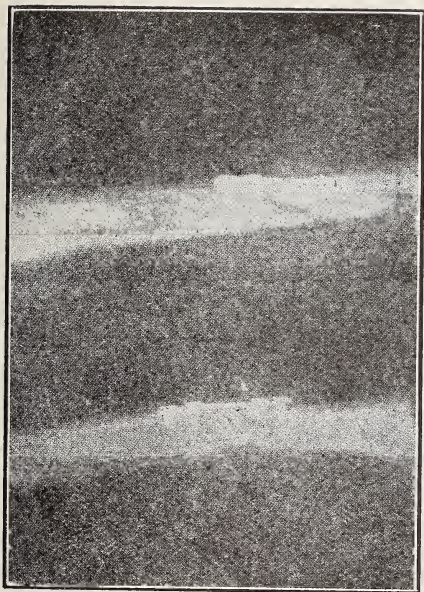
Case M. Male aged 35. Bad compound, comminuted fracture of fibula. Treated for eight months with fracture box. Numerous loose fragments were found. Fibula was shortened and pinned to lower end of tibia with wire nail. A Lane plate was applied, but owing to the softness of the bone, the screws did not hold. The persistence of the infection and the non union made the patient insist on amputation.



Case N, Radiograph 1.

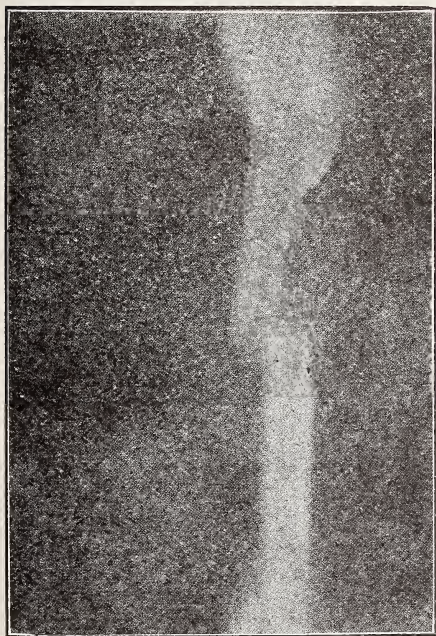
Case N. Boy aged 3 1-2 years. Simple transverse fracture of middle of left femur. Plated one week after injury. Owing to inability to reduce and keep fragment in place. Wound healed by first intention. Patient after eight months after operation was running and playing without complaint. No shortening nor evidence of irritation.

Lane plate should not bear all the burden of such complications. Further, the condition of the bone greatly governs the degree and duration of the fixation accomplished, which in turn measures the efficiency of the plate. The following cases, mostly failures, will give some idea of the points in question.

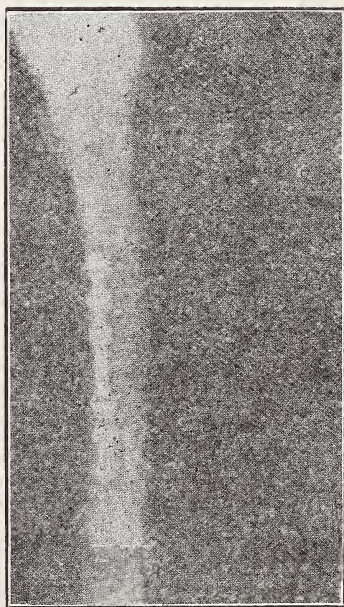


Case P, Radiograph 1.

Case P. Boy aged 18. Compound fracture of left humerus, caused by wagon loaded with coal passing over the member. Operation was performed two days after injury. No infection of wound which healed kindly as soon as devitalized soft parts separated. After results excellent.



Case R, Radiograph 1.



Case R, Radiograph 2.

Case R. Young woman 21 years old. (Cow girl from Cheyenne.) Simple ununited fracture. Five months standing of left femur. Junction of upper and middle third. Wound healed promptly without infection. Less than one-half inch shortening.

The question to be asked in reviewing a case of this kind is; how much good and how much damage was done by the Lane plate? Without its use I believe the limb and perhaps the patient's life

would have been lost. That the upper spot of necrosis was encouraged or caused by the screw-hole there can be no question, but the damage done is trivial compared with the good accomplished. (Will



Case S, Radiograph 1.

There was also a spot of necrosis at the site of the upper screw holes. There was excellent union of the fibula and better of the tibia than the radiograph would indicate.

state that sometime later patient was thrown while driving a wagon, refractured limb at seat of old injury, and died of septic endocarditis on September 15, 1912.)

Discussion on the papers of Drs. A. P. Stoner and J. W. Martin.

Dr. J. C. Rockafellow: I suppose there is no class of cases about which we have as many opinions as we have about the treatment of fractures. These papers have both been very excellent ones, but my experience in the use of the Lane plate has not been as satisfactory as I am led to believe Dr. Martin's results have been. For instance, in the case of fractures in the upper part of the humerus I have been unsuccessful in getting the screws to hold on account of the cancellous construction of the bone. However, in the shaft of the bones I don't think there is anything that takes the place of the plate.

There has been a good deal written and said relative to the use of the Lane plate or appliances of the kind in patients that have been suffering from syphilis, and I have had one or two experiences in cases of that kind which have been operated by other means, and even by the Lane plates, in which the screws did not hold. However, where those cases have been treated for syphilis at the time the result was good when the plate was used.

Relative to Dr. Stoner's paper on fractures—particularly on Colles' fracture, I think his remarks as to fractures after being properly reduced applies very well to the transverse fractures. However, I think that in the oblique fractures they do not remain reduced, and some of the greatest difficulties we have in maintaining reduction are in oblique fractures in the neighborhood of the wrist. Those cases, if they are not operated on originally, almost invariably have to be operated upon later.

The application of splints or dressing I think varies a great deal with different men. Personally I have used the old-fashioned Bond splint to very good advantage. Many of the modifications of this splint are now in general use.

Case S. Male, aged 30. Compound, comminuted fracture of both bones of the right leg. Over three inches of bone was exposed and denuded of periosteum. Soft tissues from ankle to knee were infiltrated with pus. Much sloughing at seat of fracture. This fellow's temperature ran 103 to 104 with a great amount of pain. We tried to control the infection for a couple of weeks without much effect. Lane plate was applied and relief from pain was remarkable. Plate was left in place nine weeks. Two of the four screws had loosened, and the plate was visible so we removed it. Since removal there were several fragments of necrosed bone taken out.

Dr. O. J. Fay: The first important question that arises in the use of the Lane plate is when to use and when not to use it; and the second question which follows is, who is to use it and who not to use it? As I understand Mr. Lane's ideas, he uses it on all simple fractures, but he does not advocate its use in compound fractures. He sidesteps on ununited fractures with the statement that possibly there might be some infection in the bone originally which caused the failure of the fracture to unite. Lane has had a large experience with the use of the plates, and it is said that in the British Isles no man has ever taken out a plate that Mr. Lane put in. Those of you who have seen him put these plates in are certainly impressed with the idea that he does not intend any germs to get in.

Personally I have never been very enthusiastic over the idea that you must never put a piece of sponge into a bone fracture. I don't believe there is any more danger of carrying infection into the wound with a sterile glove than there is with a sterile instrument. However, Mr. Lane's results have been so uniformly good that no man can question but that his technic is perfect. Also he is a perfect operator, if such an expression can be used of any man, and for that reason his results are great. But when you come to the ordinary mortal, such as myself and the rest of us, using Lane plates, the question naturally arises whether we ought to treat all of these simple fractures by the use of the Lane plate. I do not believe anyone is willing to say that all such fractures should be thus treated. I believe that the Lane plate or any other mechanical appliance for holding bones together should be considered only after every possible ingenuity on the part of the surgeon or doctor who is taking care of the fractures has proven that it will not hold by the ordinary closed means. This seems to me the sensible way in which to view this method of treatment. When the closed methods of treatment do not meet with success, as shown by the x-ray (and it goes without saying that every case of fracture ought to be x-rayed both before and after reduction), it becomes necessary to use some form of mechanical appliance. The Lane plate is the one that all others, though bearing various names, are copied from, I think.

Then comes the question whether or not a Lane plate should be used in a compound fracture. Here there is a great deal of discussion. Personally we have had quite a little experience (not so much as your president would have you understand, however), and we have had some very satisfactory results while I do not remember that we have had any disastrous ones from the use of these plates in compound fractures. I remember one man in this city who three or four years ago as the result of an automobile accident had two or three inches of his tibia protruding through the tissues. The fragments were brought into apposition, a plate applied and left on for some six or eight weeks. It was then removed—as it is usually in cases of compound fracture after union has taken place.

In such cases as Dr. Martin showed, where pus is coming from the wound and you have a real infection, it would seem to me that the results obtained are so good that the use of the Lane plate could not be questioned, regardless of the fact that you are very frequently taught by some of the great men at least, that you should not touch the bone in a compound fracture, but should wait until the wound is clean and then proceed to care for the bone. The use of the bone plate is, in my judgment, indicated in these cases, for the reason that clinical experience has shown that their use does bring good results.

We have not had any particular trouble with the failure of the screws to hold in these cases, such as in the fracture of the upper humerus described by Dr. Rockafellow, and the amount of infection that has followed in these cases has not been sufficient to cause us any great amount of worry.

There is another thing about the use of the Lane plate in an ununited fracture that I think ought to be impressed a little more strongly than it has been: namely, that the bone plate does not insure union. In Chicago in October I heard Dr. Murphy say (and it is really impossible to discuss the question of fractures without the use of Dr. Murphy's name) that there are a greater number of ununited fractures today than there were twenty years ago when he had a very large practice, especially among fracture cases; and the reason he gave for this was that we are treating these cases entirely too well by the use of the Lane plate (or of the peg which he prefers), and thus do not get the callous formation

that we used to get when the bones were not so well fastened and there was more jiggling.

Another point along the line of Dr. Stoner's paper that I think is of importance is that where you have fractures in the neighborhood of joints you do not want a very large callous, and consequently the fragments should be nailed and held in absolute apposition, so that as little callous as possible may be thrown out.

Still another point in regard to the use of these plates that is not always taken into consideration is that you should treat all these bones just the same after the application of a plate as you would if no plate had been put on; that is, the plate does not necessarily shorten the time during which the leg or arm is not used. The fracture should be kept in a splint plaster of paris cast, or necessary dressing until it has had sufficient time to heal.

Dr. W. S. Conkling: I do not have very much to add. The ground has been pretty well covered by the essayist and Dr. Fay. I think a very important point that Dr. Fay made was that the dressing should be put on to maintain the parts in position just as carefully with a Lane plate as without. It is merely an additional treatment to the usual dressings.

In regard to Dr. Stoner's Colles' fracture, I would judge from the statements he made that he does not believe in anesthetizing all cases. I believe the case that should not be anesthetized is the exception.

In regard to the splinting of a Colles' fracture, I believe that a moulded plaster paris splint, anterior and posterior, affords the best dressing in the majority of cases. Of course each case should be studied as to that dressing which will hold it the best.

I believe that Lane's plate has a place in compound fractures, and that there are no objections to its use when indicated, with the understanding, of course, that it will have to be taken out. Where it is not indicated there is no reason for putting it on than in the simple fracture; but when it is indicated I think it is just as good surgery to put on a Lane plate in compound fractures as in closed fractures.

Dr. Chas. J. Ryan: I am very sorry I did not get in time to hear all of Dr. Stoner's paper. There is not very much to add to the discussion that comes to my mind, with possibly the exception that a little more stress might be laid on the importance of the periosteum in dealing with ununited fractures, and certain fractures presenting problems in reduction. Taking into consideration the location of the line of division of periosteum, relative to the line of bone separation, with the interposition of flaps of periosteum between the two fragments, causing a fibrous or non-union; periosteum is a limiting membrane to the growth of bone, and also limits the displacement of fragments, minimizing deformity in the majority of fractures; bone depends upon periosteum to a great degree for its nutrition, consequently the stripping of periosteum from the bone, either at the time of fracture or by infection, occasions necrosis, excessive callous formation and greater deformity. in some cases we see.

In dealing with fractures near the joint articulations, sometimes, (as has been shown by Hessert) the difficulty in reduction is influenced to a great extent by a strip of periosteum which remains intact—i. e. fastened above and below the line of separation of bone; we will take for example a supra-condyloid fracture of the humerus close to the joint, and the lower fragment has been displaced backwards, locking its anterior surface midway, or near the posterior surface of the upper fragment; the strip of periosteum referred to, being on the posterior aspect of the humerus; ordinary traction and flexion of the fore-arm fails to effect reduction, the periosteum may be the stumbling block that holds the fragment back; in such a case I am particularly impressed by Dr. Stoner's remark of primarily increasing the deformity. I have seen Hessert demonstrate this condition with x-ray pictures showing the strip of periosteum, and effect a reduction first, by increasing the deformity, hyper-extending the forearm, carrying the lower fragment with it, then applying traction on the forearm unlocking the fragments, engaging the posterior surfaces of the bone at the line of separation, then acute flexion of the forearm in which it is maintained by dressing.

Another point that Dr. Stoner made, that of removing the plate from the lower end of the humerus successfully under local anesthesia is very interesting. I have used local anesthesia in reducing two fractures lately, by the peri-neural blocking method in a most gratifying way.

Concerning the application of the Lane plate and the open treatment of fractures, it is interesting to note Huntington's report that five years ago on addressing a communication to over a hundred surgeons re-

questing an expression of their attitude, he received a reply in the negative from eighty-five per cent, an affirmative from only fifteen per cent; the same question was asked a greater number of surgeons within the last year and the percentage had entirely reversed, eighty-five per cent recommending the procedure and only fifteen per cent condemning it.

I agree with Major Conkling in the statement that it is the exceptional case which does not require an anesthetic, and I believe that local anesthesia promises such to both patient and surgeon in the reduction of fracture and dislocations.

Dr. F. Rosenblatt: I think these are two excellent papers, but it just occurred to me that we ought not to forget to estimate the patient. I mean by that that in the case of a patient who has a possible beginning tabes we cannot expect the same treatment of a fracture of the patella to do for that patient as it will for a normal one. We must have that patella wired so it cannot possibly get away. Has the patient a possible lues? Don't forget your salvarsan or your mercury. Has he tuberculosis? Has he, as has at times occurred, a malignancy? I think there is no such hurry to get a fracture fixed up but what we must take time to look over our patient first, because, as I understand it, it is the patient who must furnish the nourishment for the bone to unite.

Dr. W. E. Sanders: The British Medical Society appointed a commission a year and a half ago to investigate the results of the modern treatment of fractures. The Lane plate investigation occupied their attention very extensively. They found, as has been reported here tonight, that Mr. Lane's work was simply perfect, while the report on the Lane plate as used by other operators was so entirely bad that they dare not publish it; and I dare say that the results in this country would be equally as bad as they were in the British Isles. In the hands of a skilled operator undoubtedly the Lane plate has a very useful place to fill; but I fear greatly that the immense amount of literature which is being put out on the use of the Lane plate in fractures is going to tempt incompetent men and untrained men, and men who are obliged to operate under improper conditions, to attempt to use this method; and I am sure that except in the hands of very skilled surgeons it is a method which should not be attempted at all. I am sure that the most of us here, if we had to trust ourselves or our friends to the care of a general practitioner, or the care of even the average surgeon, would take the chance ourselves by the old method in the hands of a general practitioner, to the Lane method in the hands of even the average occasional operator. I am sure that if the method ever becomes popularized, which it is tending rapidly to be, the results will simply be appalling, and the grounds for malpractice suits will certainly be greater than they have been hitherto by the old method.

Dr. J. G. Davis: During my stay in the New York Polyclinic I was taught in order to insure good results after a Colles' fracture it is necessary to administer a general anesthetic. This is to get complete relaxation of the tendons surrounding the part, which otherwise is impossible. Since complete relaxation is required for only a minute or two, nitrous oxide or ethyl chloride is preferable to ether or chloroform. Prof. Bodine used to say that he knew of no better method of handling an unruly competitor than to send him one of these Coles' fracture cases, because if he does not give anesthetics, the result will be apt to bespeak this doctor's skill.

While speaking of the good results to be realized from the use of wires and plates, I would like to report a case, which came to me last June a year ago, with a complete separation of the upper and lower halves of the patella. Since this man was a freight brakeman and earned his living by manual labor, I insisted strongly on his entering the hospital and submitting to an operation for wiring the parts together, which, as we all know, is the only way we can hope for a bony union in a patella. This, however, he refused and was taken home. After the swelling had reduced, the leg was extended on the thigh and by the use of straps fastened to a posterior splint I was able to bring the portion of patella in coaptation. A plaster cast was next applied from the hip to the ankle and kept there for more than four months, shortly after which time he resumed his work. Of course there was great atrophy of the limb, which soon became normal by use. I, of course, warned this patient against strains, etc., but I believe he did not heed my warnings very seriously. I was surprised a short time ago to see this man with only about one-half a finger breadth of fibrous tissue between the fragments and no limping

whatever. I simply mention this case to illustrate what can happen for us occasionally. However, I am still convinced that the open operation is the correct method to follow in treating these fracture patella cases, especially among laborers and those requiring heavy strain on the quadriceps tendon.

Dr. E. J. Harnagel: Pretty nearly everything, it seems to me, has been said about these fractures. There are a few bones which are especially adaptable, it seems to me, to the Lane plate, and those are the bones which are not paired—the single ones. I refer especially to the humerus, in which the fracture is practically always oblique rather than transverse, and it is practically impossible to put on a retentive dressing that will retain anything like perfect apposition. So that in pretty nearly all the fractures of the humerus, with the exception of those that occur near the elbow joint, if the Lane plate will secure better apposition it is indicated, in my judgment. Then there are the fractures of the femur; the same holds true of them. You can put Buck's extension on a femur and imagine you are getting a pretty good result; but after about four or five weeks you take the extension off to see what you have, and the limb is just as flaccid as before you put it on; in other words, you have no apposition of your fragments. There is another bone in which deformity is sure to result, and the public is demanding an anatomical result just about as much as they are a functional result. A person will be able to hobble around with a leg that is a little bit crooked one way or the other, but he will insist on having a leg that looks like something besides, and in the years to come, and which are close at hand, the public will demand an anatomical result just about as much as they will a functional result. The bone to which I refer is the clavicle. I don't think I ever saw a clavicle in my life that was put up in any sort of conservative dressing but what, after the patient got well, there was a knot on there that looked like anything except a good clavicle. Almost any dressing that you can put on a clavicle will do absolutely nothing. The only reason you get any results at all in the average fracture of a clavicle is simply because of the great reparative power which the bone possesses, and the fact that it has to do with a joint which is very movable, and can move in spite of all restrictions, so that you get a deformed clavicle and still a good functional result. If you will stop and think about it, you will decide that you haven't done a thing for that patient, because it is simply the natural state of affairs that is taking care of itself.

Dr. T. B. Throckmorton: The question of operative interference in cases of fracture is an important one, and one in which much interest is being manifested, if we will but note the current literature on the subject, and also the discussion which has taken place before this organization this evening; and yet I could not help but feel, as I listened to these articles presented tonight, and also to the discussion, the fact that surely if in any line of work "cleanliness is next to godliness" it is in this class of work. Dr. Martin referred in the beginning of his paper to the fact that it is just as important to have everything in as sterile and aseptic condition in doing bone surgery as it is in doing abdominal work. The fact of the matter is, I believe an individual can open an abdomen and do considerable sloppy work, and yet if he gives his patient the proper after-care, with the Fowler position and Murphy proctoclysis, that the patient will stand a far better chance of recovery with a minority of infection than he will if any sloppy work is done at all in bone surgery.

What experience I have had in Lane plating since my association with Dr. Ruth is not very great. I think we have had some eight or nine cases altogether, and have used some ten or eleven plates in all. Our results have not been as favorable as were those indicated by the essayist in his use of the Lane plate, but I am glad to say that we have learned some things. In the first place, the use of iodine as a preliminary preparation should, in my judgment, be used with some caution. If the application be too heavy, or the tincture an old one, blistering of the parts may result which favors the introduction of septic material into the wound by way of the incision. Again, we have drained, by the use of the soft metallic drain, all the wounds, and in our early career we applied a wet dressing of aqueous solution of carbolic acid of a strength of five per cent. In one or two cases, however, we found that this solution produced a tendency to blistering and added to our difficulties, and also helped along the infection which later came about. Now, there is no question in my mind but that Mr. Lane's success in this work comes from the fact that he doesn't carry any infection into the wound; that he makes

such a free incision that he knows exactly what he is about, giving himself a good exposure of the field, reducing the trauma of the parts to the minimum, and also putting nothing into the wound except the uncontaminated tips of his instruments. While in the perusal of the literature I have never been able to find any reason given by Mr. Lane for his success, yet to my mind it comes about from the fact that he does not carry any infection into the wound. His instruments are sterile; nobody handles them but himself; and by carrying no infection into the wound he gets primary union, which, of course, does not necessitate the removal of the plate.

The after treatment of these cases, I believe, is just as important as it is to have good technic in your operative procedure, and for that reason in the last few cases, while we have continued to use the carbolic acid solution, we have substituted the pure alcoholic for the aqueous solution, and in what few cases we have used this dressing we have been able to obtain apparently perfect results in that we have had no infection, and in the total number of cases now standing over a year there are three in which the plates have not been removed, making an average of fifty per cent of successful plating in clean cases. Of course it goes without comment, that in all infected cases in which the plate is used, its removal is a foregone conclusion. The statement was made by Murphy in Chicago somewhat recently that at least ninety-eight per cent of the plates put on by the surgeons in this country and on the continent had to be removed. As Dr. Fay brought forth in his remarks, there is yet a case to be reported in the British Isles in which the bone plate was put on by Mr. Lane himself that had to be removed.

In regard to the treatment of fractures of the cervical neck of the femur, I simply wish to state, that the "anatomical method" undoubtedly has proven its source of usefulness in this field of fractures, and that primarily, operative interference is seldom, if ever, justifiable.

Dr. O. W. Lowery: I have practiced medicine forty-three years and had a country practice. I never have converted a closed wound into an open one. Since I have been in Des Moines I have had a fracture of the humerus and a fracture of the fibula. One patient was 82 years old, the other 75. I did not convert either one into an open wound, and I had good results. I have had almost every kind of a fracture that has happened in the last forty years in Iowa, and I have the first one yet to have bad results or a threatened suit for malpractice. I simply rise here to defend the general practitioner, as I have had that line, in regard to the remarks that have been made.

Dr. A. P. Stoner: I did so much talking in reading my paper that I don't feel like burdening you any further. Infection must be absolutely kept out of the wound in the open operative treatment of fractures. One of the principal dangers that we encounter is from pricking the glove by small spiculae of bone. We are also handling heavy instruments and doing heavy work, and without our realizing it we are very liable to puncture our glove, and if the least bit of infection gets into these wounds they most certainly become infected.

In regard to anesthetizing the patient, I think that should be done before attempting to reduce any fracture, unless it should be some of the epiphyseal separations. One of the last Colles' fractures I had was in a boy eighteen years old with an epiphyseal separation, and it was a very easy matter to put it back.

I have seen a few cases of compound fractures that have been plated with good results—not very many. Nearly every plate has to be taken out, and it is taken for granted by surgeons who use plates in compound fractures, that they have to come out later on. If a fracture can be treated until the infection is eliminated, then put the plate on if you haven't got union. I think it is better than to put the plate on at first.

As Dr. Lowery says, treat them the way we used to, and most of them will get along all right without the plate. We don't have to plate every compound fracture just simply because we have the plates and think we know how to use them. By the use of the plate we invite infection by exposing and handling compound fractures in a large majority of the cases.

Dr. J. W. Martin: The plate is a mechanical device and has no power of producing bone. The Lane plate is a piece of steel. It is put in as a mechanical device and does not make the union of the bone at all, except by apposition. The main object of the paper was to bring out discussion, and I think that has been done. I thank you very much.

MODEL LABORATORY FOR THE GENERAL PRACTITIONER

HENRY ALBERT, M. D., AND MILDRED E. SCHEETZ, M. D.,
Iowa City.

Outline.

I—**Introduction**—Explanatory of exhibit.

II—**Purpose**—Realization of value of laboratory work in every day practice.

III—**Scope**—Limited to the most important needs of the general practitioner.

IV—**Arrangement For Conducting Laboratory**—Work to be done "at home" instead of being sent to a distant laboratory.

V—**Expense of Equipment**—From \$175.00 to \$300.00.

VI—**Laboratory Room and Furniture**—Room about 8x8 ft.

VIII—**Apparatus**—necessary for the tests recommended.

IX—**Reagents**—necessary for the tests recommended.

X—**Diseases In Which Laboratory Tests Are Of Especial Value** with an enumeration of the principal laboratory findings.

XI—**Questionnaire** to obtain the opinion of the general practitioner concerning laboratory work.



Fig. 1.—View of "Model Laboratory." Letters indicate the four sides as represented in Fig 2.

Introduction. This article is written to accompany an exhibit of a "Modern Laboratory for the General Practitioner" which will be shown at the next meeting of the Iowa State Medical Society. The exhibit was prepared at the request of Dr. J. E. Luckey of Vinton, Chairman of the Section on Medicine.

Purpose. The purpose of the exhibit is to stimulate every physician to a realization of what use should be made of the laboratory in every day practice. With that purpose in mind, the writers, after consultation with a number of physicians from various parts of the country in order to get various points of view, herewith present specifications as to how, in their opinions, a "Modern Laboratory for the General Practitioner" should be constructed and equipped and what kinds of laboratory examinations the general practitioner should be prepared to perform.

Scope. The scope of the "Model Laboratory" is limited by several factors. First, it is a laboratory for the general practitioner—not for the laboratory specialist nor for the specialist of a certain line of practice. Second, there is naturally a question as to what features of a physician's work should be regarded as belonging to the laboratory. All chemical and microscopical examinations would, by all, be regarded as laboratory work. Of physical examinations we have included the taking of blood pressure, but not the use of the stethoscope or ophthalmoscope, since such is more especially a part of a physician's office—as distinguished from laboratory—equipment. For the same reason we have not included the making of x-ray examinations. The making of microscopic examinations of tissue and the Wassermann test, we regard as work that should be limited to the laboratory specialist.

We do not expect that all will agree with us in the scope of work as presented in this paper; indeed, when submitting the preliminary outlines to a number of physicians, we were told on the one hand, that it was entirely too elaborate—that all that the general practitioner needed was a few test tubes and a bottle of nitric acid, and, on the other, that it was not sufficiently complete—that it should include such tests as the permeation test to determine the functional activity of the kidneys.

Arrangements For Conducting The Laboratory. It is not expected that every physician, regardless of training, will make all of the tests indicated below, and on the other hand, many are capable of making the tests may not have time to personally make all routine examinations. We believe, however, that the examinations indicated should preferably be made "at home" instead of being sent to some distant laboratory. It may be advisable for a physician to have the examinations made by a trained assistant or a number of physicians may arrange to have their examinations made in a common laboratory. In the larger cities the physicians may well maintain a well-equipped laboratory in charge of a full-time laboratory

worker. In small cities, it may be more economical to co-operate with the city board of health laboratory.

Expense of Equipment. The expense of equipping a room with the tables, cases, shelves, drawers, apparatus and reagents necessary for making the various kinds of examinations indicated below varies from \$175.00 to \$300.00, depending principally on the kind of apparatus secured.

Laboratory Room And Furniture. The room designed has a floor space, 8 feet square, one window (preferably facing north) and one or two doors. The accompanying illustrations are self-explanatory. The plans may readily be modified to suit differently shaped

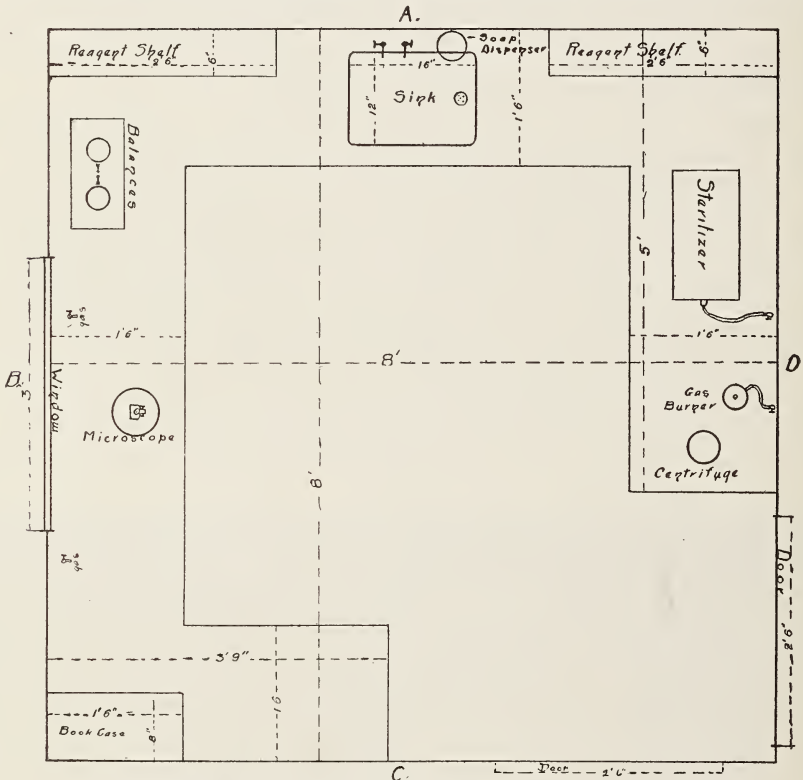


Fig. 2 - FLOOR PLAN
of
Model Laboratory
1 inch = 1 foot

rooms. We believe that the laboratory room should be immediately adjacent to the office "examination" room. If provided with two doors, one should lead to the waiting, the other to the office "examination" room. The table tops may be made of wood, soapstone, tile, wood covered with glass, etc. We recommend a two inch plank (dressed smooth) made of any kind of wood but treated with aniline black to make it fire, acid, and alkali proof. The formula for finishing the table in such manner is as follows:

Prepare solutions A and B.

Solution A. Ferrous sulphate, 40 grams; Copper sulphate, 40 grams; Potassium permanganate, 80 grams; water, 1000 cc.

Solution B. Aniline, 120 cc; Hydrochloric acid 180 cc; water, 700 cc.

Apply two coats of A (hot) with brush—the second as soon as the first has dried. Wipe off excess. Apply two coats of B in same manner. When perfectly dry, apply a thin coat of raw linseed oil thinning with turpentine if desired.

The other woodwork of the room may be stained, (preferably brown), to harmonize with the black tops and also not to show stain marks too decidedly.

Examinations. (Recommended to be performed by the general practitioner “at home.”) The objects to be examined have been

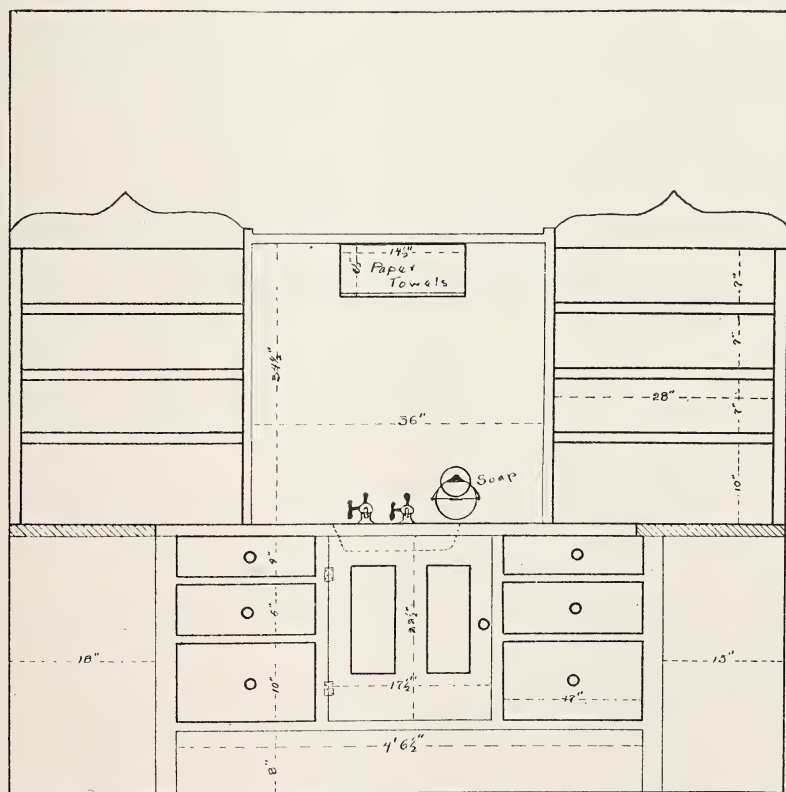


Fig. 3. - Elevation A.

arranged in alphabetical order. As a rule only one method—the best one—for making a given test is mentioned. Where two are mentioned, the preferable one is given first. In order to make reference to the various tests as easy as possible, the page in Simon's Clinical Diagnosis (Eighth edition, 1914) on which each test may be found is given. We regard Simon's as the best book for the purpose, principally because it presents, in alphabetical order, the various diseases with their laboratory findings. Other good labora-

tory reference books are those by Emerson, Wood and Boston. As a smaller work and, for that reason, somewhat more simple and convenient, Faught's Essentials of Laboratory Diagnosis is recommended.

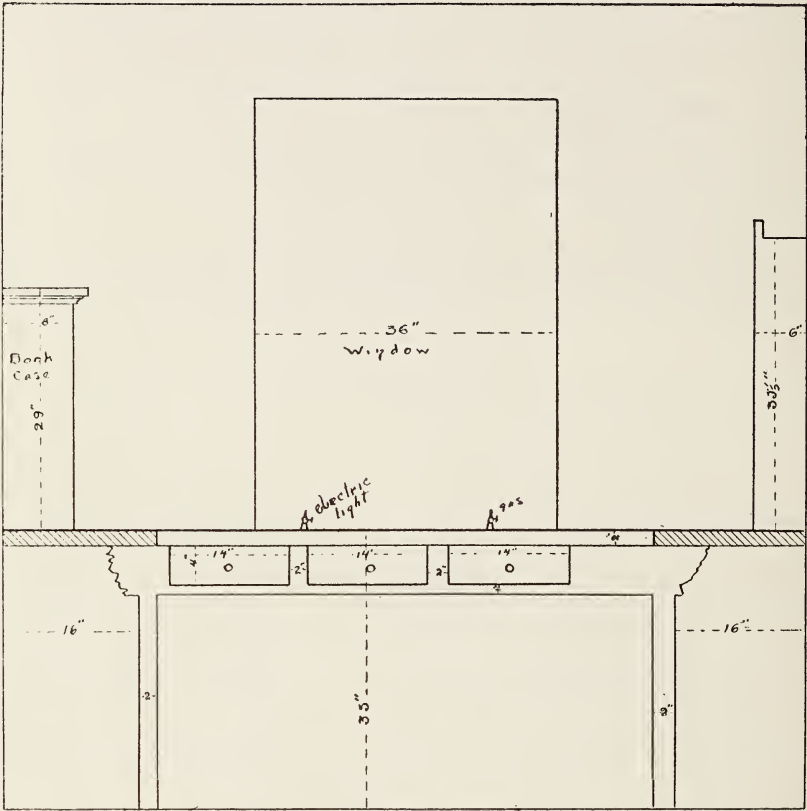


Fig. 4 - Elevation B.

TABLE I. EXAMINATIONS.

| Object | For what. | Name of Method. | Reference. | Page |
|---|--|-----------------|------------|----------|
| I—Bacteria in general. | | | Simon.. | 511-536. |
| II—Blood. | | | | |
| 1—Count red corpuseles..... | Thoma. | Simon.... | 73. | |
| 2—Count white corpuseles..... | Thoma. | Simon.... | 71. | |
| 3—Hemoglobin. | { Sahli (pref.) .. or Talquist. | Simon.... | 84. | |
| 4—Microscopic, especially..... | | Simon.... | 56. | |
| a—Differential count. | | Simon.... | 74. | |
| b—Abnormal cells. | | Simon.... | 22-45. | |
| c—Malarial parasites. | | Simon.... | 119. | |
| 5—Blood pressure. | | | | |
| III—Cerebrospinal fluid. | | | | |
| 1—Gross exam.—especially color and turbidity. | | Simon.... | 500. | |
| 2—Globulin test | { Noguchi. or Ross Jones. | Simon.... | 504. | |
| | | Simon.... | 504. | |

| Object | For what. | Name of Method. | Reference. | Page |
|---------------------|--|--|------------|-----------|
| | 3—Microscopic, especially cells and bacteria. | | Simon.. | 505-507. |
| IV—Feces. | | | | |
| | 1—Gross exam.—especially color, consistency, worms, calculi, etc. | | Simon.. | 210-213. |
| | 2—Microscopic—for starch, muscle fibers, fat, ova, etc..... | | Simon.. | 215-221. |
| | 3—Occult blood. | { Phenolphthalein (pref.)... or Guaiac. | Simon.... | 214. |
| V—Gastric contents. | | | | |
| | 1—Gross exam. especially for amount, color and appearance. | | Simon.... | 175. |
| | 2—Total acidity | | Simon.... | 176. |
| | 3—HCL (free) | Dimethylamino- azo-benzol. | Simon.... | 170. |
| | 4—HCL (combined) | Toepfer's | Simon.... | 180. |
| | 5—Lactic acid. | { Kelling's (pref.) or Strauss' | Simon.... | 187. |
| | | | | Simon.... | 188. |

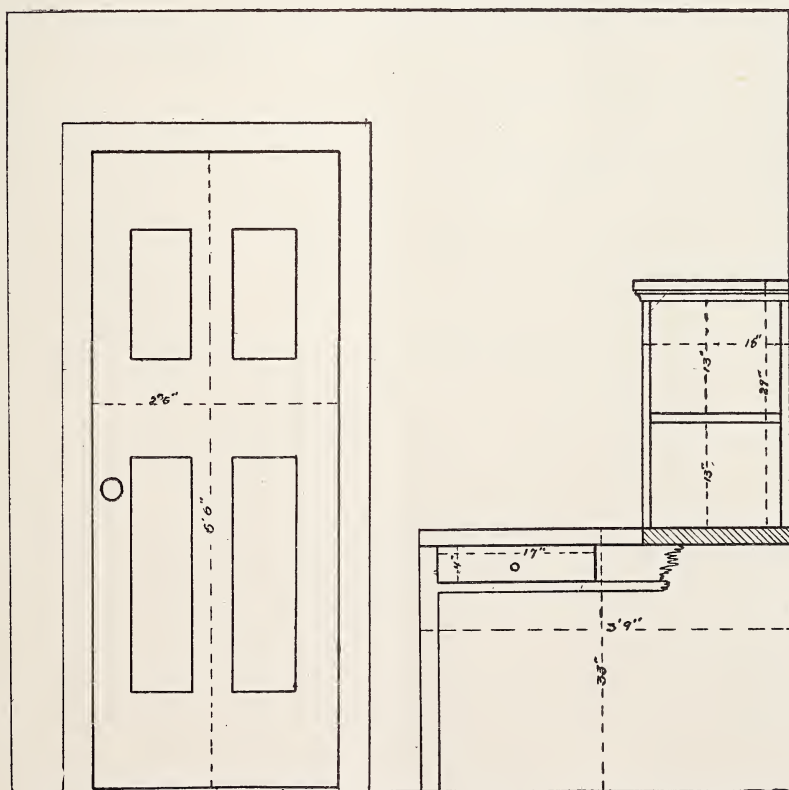


Fig. 5 - Elevation C.

| Object | For what. | Name of Method. | Reference. | Page |
|--|-----------|---|------------|----------|
| 6—Occult blood | | { Phenolphthalein Simon.... or Guaiac. Simon.... | 213. | 213. |
| 7—Microscopic exam.—es- pecially for blood, pus, and bacteria. | | | Simon.... | 203. |
| 8—Stercoraceous material. | | | Simon.... | 203. |
| VI—Pus. | | | | |
| 1—Gross exam. especially for color, odor and ap- pearance. | | | Simon.. | 491-493. |
| 2—Microscopic,—for cells and bacteria. | | | Simon.... | 491. |
| VII—Secretions. | | | | |
| 1—Mouth and nose. | | | Simon.... | 167. |
| 2—Urethra and Vagina. | | | Simon.... | 494. |
| 3—Eye and ear. (see Pus).. | | | | |
| VIII—Sputum | | | | |
| 1—Gross exam.—especially for amount, odor, blood, etc. | | | Simon.. | 270-277. |
| 2—Microscopic—principal- ly bacteria; especially tubercle bacilli and pneumococci. | | | Simon.. | 286-289. |

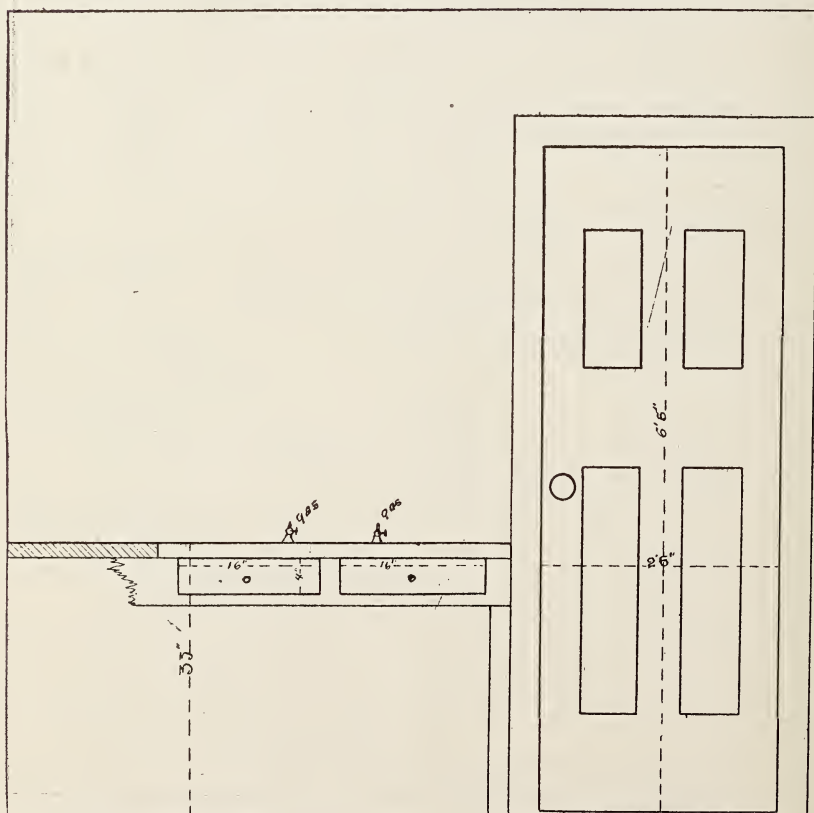


Fig. 6 - Elevation D.

| Object | For what. | Name of Method. | Reference. | Page |
|-----------|---|---|-----------------------------|------|
| IX—Urine. | | | | |
| 1— | Gross exam.—for color, (including color of foam) turbidity, sedi- ment, etc. | Simon.... | 297. | |
| 2— | Reaction | Simon.... | 304. | |
| 3— | Specific gravity. | Simon.... | 300. | |
| 4— | Albumin. | Simon.... | 350. | |
| | a—Qualitative. | { Heller's. Simon.... or Boiling. Simon.... | 376. 370. | |
| | b—Quantitative. | Esbach's Simon.... | 370. | |
| 5— | Bence Jones' Protein. | Simon.... | 374. | |
| 6— | Sugar. | | | |
| | a—Qualitative. | { Benedict's (pref.) Vol. 57, J. A. M. A. 1911. or Haines', Rockwood (Chem.) or Trommer's Simon.... and if necessary Phenylhydrazin, Simon.... | 1193 14. 382. 385. | |
| | b—Quantitative. | { Benedict's (pref.) J. A. M. A., 1911, Vol. 57. or Purdy's, Rockwood (Chem.) or Fehling's Simon.... | 1193. 19. 387. | |
| 7— | Blood (occult) | { Phenolphthalein. Simon.... or Guaiac. Simon.... | 213. 214. | |
| 8— | Bile. | Hammersten's, Rockwood (Chem.) | 226. | |
| 9— | Acetone. | Legal's. Simon.... | 419. | |
| 10— | Diacetic. | Gerhardt's. Simon.... | 423. | |
| 11— | Indican. | Obermayer's. Simon.... | 399. | |
| 12— | Chlorides. | Simon.... | 309. | |
| 13— | Microscopic for blood, bacteria, casts, crystals, epithelial cells, fat, par- asites, pus, etc. | Simon.... | 439. | |

Apparatus. The apparatus necessary to perform the examinations recommended in Table I is presented in alphabetical order. It will be noted that two lists are given—the “preferable” list costing somewhat more than the “satisfactory” list. The apparatus and also the reagents presented in Table III may be obtained from any first class supply house. The sterilizer recommended in the preferable list may also be used by the physician for sterilizing surgical instruments, dressings, etc. The microscopes recommended are both of American make. Of the foreign makes, both Zeiss and Leitz microscopes may be recommended. The duty on such causes the price to be somewhat higher.

TABLE II. APPARATUS.

| Name | Quantity | "Preferable" | | "Satisfactory" | |
|---|---|------------------|---|------------------|-------|
| | | Price (about) | | Price (about) | |
| Apron. | 1..... | \$ 1.00. | ..... | \$ .15 | ..... |
| Albuminometer (Esbach) | 1..... | .55. | ..... | .55 | ..... |
| Balance. | 1..... | 3.50. | ..... | 3.50 | ..... |
| Balsam bottle | 1..... | .25. | ..... | .20 | ..... |
| Basin. | 1..... | .40. | ..... | .40 | ..... |
| Beakers (30 cc. & 300 cc.) .. | 2..... | .37 | ..... | .25 | ..... |
| Bell jar (9x17) | 1..... | 2.25 | ..... |  | ..... |
| Blood Lancet | 1.. (Boldt)... | 1.65 | (Manley's) | .15 | ..... |
| Blood pressure apparatus | 1 (Faught)... | \$25.00 | .. (Riva Rocci) | 8.50 | ..... |
| Boiler (8 in.) | 3..... | 1.20 | ..... | .40 | ..... |
| Bottles (drop 60 cc.) | 6..... | 1.50 | ..... | 1.00 | ..... |
| Bottles (G. S. 125cc)... | 8..... | 2.00 | ..... | .80 | ..... |
| Bottles (C. S. 500cc)... | 3..... | .75 | ..... | .30 | ..... |
| Bottles (with outlet 500cc). | 1..... | .60 | ..... | .60 | ..... |
| Burner (Bunsen) | 1..... | .35 | ..... | .35 | ..... |
| Burner (round) | 1..... | 1.80 | ..... |  | ..... |
| Burette (25cc) | 2..... | 1.30 | ..... | .65 | ..... |
| Clamp (Burette) | 1..... | .40 | ..... | .30 | ..... |
| Clamp (tubing) | 3..... | .45 | ..... | .45 | ..... |
| Centrifuge | 1. (Electric) .. | \$41.00 | (Water or Hand) | 10.00 | ..... |
| Coverglasses No. 1. | 1-2 oz. | .50 | ..... | .50 | ..... |
| Electric light (for microscope) | 1..... | 2.50 | (frosted elect. bulb)... | .75 | ..... |
| Evaporating dishes (50cc & 100cc) | 2..... | .45 | ..... | .25 | ..... |
| Filter paper | 1 package.... | .24 | ..... | .24 | ..... |
| Flasks (100 & 1000 cc Erlenmeyer) | 2..... | .50 | ..... | .25 | ..... |
| Forceps (coverglass) | 2..... | .30 | ..... | .15 | ..... |
| Forceps (coarse) | 1..... | .35 | ..... | .35 | ..... |
| Forceps (fine) ..... | ..... | .60 | ..... |  | ..... |
| Funnels (plain (small & medium) | 2..... | .22 | ..... | .07 | ..... |
| Glass tubing | 1 ft..... | .05 | ..... | .05 | ..... |
| Glass rod | 1 ft..... | .05 | ..... | .05 | ..... |
| Graduates (cylindrical 5cc & 50cc) | 2..... | .57 | ..... | .35 | ..... |
| Hemacytometer (Thoma) 1 | Türk-ruling | 11.60 | Thoma-ruling.. | 10.00 | ..... |
| Hemaglobinometer | 1.... Sahli... | 7.00 | Talquist | 1.50 | ..... |
| Incubator | 1 Small (phys.) | 19.00 | Vacuum bottle | 1.00 | ..... |
| Japanese lens paper | 1 pkg..... | .24 | ..... | .24 | ..... |
| Knife (fine) | 1..... | .60 | ..... |  | ..... |
| Knife (coarse) | 1..... | .40 | ..... | .40 | ..... |
| Labels | 1 box..... | .10 | ..... | .10 | ..... |
| Microscope | 1 { B. & L., BB H 8 } or Spencer No. 36 } | 80.00 | { B & L.-FF 8 } or Spencer No. 45 } | 65.00 | ..... |

| Name | Quantity | "Preferable" Price | "Satisfactory" Price |
|--|----------------|---|-------------------------|
| Microscope—Mechanical stage | 1.. | { B & L. No. 2114 or Spencer No. 490 } | 17.00 |
| Petri dishes 50mm. | 3..... | | |
| Pipette (Ordinary rubber bulb) | 1-2 doz..... | .15 | .20 |
| Pipettes grad. 1cc.—10cc.—25cc... .. | 3..... | .50 | .15 |
| Platinum wire (Medium) | 2-inch..... | .50 | .35 |
| Rubber tubing No. 7 | 18-inch..... | .20 | .20 |
| Rubber tubing No. 8 | 16-inch..... | .25 | .25 |
| Scissors | 1..... | .65 | .10 |
| Sedimentation glass (120 min.) | 1..... | .35 | .35 |
| Slides (thin) | 1-2 gross..... | .50 | .50 |
| Slide box (100 capacity) 1..... | | .50 | .10 |
| Sterilizer (combination of water, steam and hot air) | 1..... | 21.25 | 6.80 |
| Test tubes 5 inch | 2 doz..... | .40 | .20 |
| Test tube rack (wire) .. | 1..... | .45 | .10 |
| Test tube brush | 2..... | .10 | .05 |
| Test tube holder | 1..... | .15 | .15 |
| Towel holder | 1..... | .75-1.50 | |
| Towels (paper) | 1 roll..... | | .10 |
| Thermometer (to 300 c) 1..... | | 2.10 | |
| Soap (liquid) | 1 pt..... | .38 | |
| Soap container (for liquid soap) | 1..... | 2.00 | |
| Universal Stand (3 rings) | 1..... | .75 | .75 |
| Urinometer and jar | 1..... | .60 | .30 |
| Waste pail (8 gal.) | 1 (Sanitary).. | 1.50 | (ordinary) .10 |
| Watch glasses | 3..... | .20 | |
| Wire gauze | 1 sq. ft..... | .10 | .10 |

TABLE III. REAGENTS.

(Necessary for the tests recommended in Table No. I.)

| Name | For what | Quantity |
|--|-----------------------|--------------|
| Acetic acid 5 % | Urine | 4oz (120 cc) |
| Alcohol 95 % | General use | 4oz (120 cc) |
| Alcohol (Acid-2 % HCL) | Bacteria | 4oz (120 cc) |
| Alcohol (methyl) pure | Blood | 1oz (30 cc) |
| Merck's or Kaulbaum's) | | |
| Ammonia (Ammonium hydrate) | | 4oz (120 cc) |
| Aniline Oil | Bacteria (Gram stain) | 1oz (30 cc) |
| Balsam (Canada) in Xylol | Slides. | 1 tube |
| Barium chloride 10 % | Urine (bile) | 4oz (120 cc) |
| Benedict's solution (A) | Urine (sugar-qual.) | 4oz (120 cc) |
| (See J. A. M. A., 1911, Vol. 57, p. 1193) | | |
| Benedict's solution (B) | Urine (sugar-quant.) | 4oz (120 cc) |
| (See J. A. M. A., 1911, Vol. 57, p. 1193.) | | |

| For what | Quantity | Name |
|--|---|--------------------------------|
| Blood stain (Wright's) | Blood | 1oz (30 cc) |
| Butyric acid 10 % | Cerebro-spinal fl,— globulin | 1oz (30 cc) |
| Calcium chloride (10 % aq. sol.) ... | Stomach (acid salts) .. | 1oz (30 cc) |
| Carbolic acid (conc) | General | 2oz (60 cc) |
| Carbol-fuchsin | Tubercle bacilli | 1oz (30 cc) |
| Cedar oil (for immersion) | Microscope | 1oz (30 cc) |
| Chloral hydrate (4 % aq. sol.) | Deodorant | 4oz (120 cc) |
| Chloroform | Urine (Indican) | 2oz (60 cc) |
| Dimethylaminoazobenzol. | Stomach (HCL) | 1oz (30 cc) |
| Eosin (yellow aq. soluble) —Grübler | Bacteria | 1oz (30 cc) |
| Esbach's reagent | Urine (albumin) | 4oz (120 cc) |
| Ether | Stomach (lactic acid) Urine (diacetic acid) .. | 2oz (60 cc) 4oz (120cc) |
| Formalin | Preservation | 4 pints |
| Fuchsin (basic)—Grübler | Bacteria | 0.1gm (1-10cc) |
| Gentian violet—Grübler | Bacteria | 0.1gm (1-10cc) |
| Gram's Iodine Reagent | Bacteria | 1oz (30 cc) |
| Guaiac (gum) | Occult blood | 1oz (30 cc) |
| Haines' Solution | Urine (sugar) | 4oz (120 cc) |
| Haematoxylin | Blood | 1oz (30 cc) |
| Hydrochloric acid (normal) | Urine (Indican) | 4oz (120 cc) |
| Hydrogen peroxide | Urine (occult blood) .. | 4oz (120 cc) |
| Iodine | Urine (bile) | 1oz (30 cc) |
| Lead acetate (10 % sol.) | Urine (Bence Jones' and Indican) | 4oz (120 cc) |
| Litmus | Urine-reaction | 2 books |
| Media (agar-agar) | Bacteria | 1 doz. tubes. |
| Methylene blue (Loeffler's) made with Grübler's stain | Bacteria | 1oz (30 cc) |
| Nitric Acid (conc.) | Urine (albumin) | 4oz (120 cc) |
| Obermayer's reagent | Urine (Indican) | 2oz (60 cc) |
| Phenylhydrazin (pure) | Stomach (acid) and. | 1-2 oz. (15gms) 1oz (30 cc) |
| Phenolphthalein sol. | Occult blood | |
| Phosphoric acid 1 % | Stomach (stercoraceous) .. | 1oz (30cc) |
| Potassium hydrate (30 %) | Clarifier | 1oz (30 cc) |
| Potassium permanganate | Disinfectant | 4 lbs. |
| Silver Nitrate (5 %) | Urine (chlorides) | 1oz (30 cc) |
| Soap (liquid) | | 1 pt. |
| Sodium Chloride (normal) | Urine (Bence Jones' test) .. | 4oz (120cc) |
| Sodium Chloride (1-10 sol.) | Blood | 4oz (120 cc) |
| Sodium nitroprusside (crystals) ... | Urine (acetone) | 1 gram. |
| Sudan III | Feces (fat) | 1oz (30 cc) |
| Sulphuric acid | Urine (Indican) | 1oz (30 cc) |
| Toisson's sol. | Blood (red count) | 1oz (30 cc) |
| Turpentine (oxydized) | Blood (occult) | 1oz (30 cc) |
| Türk's sol. | Blood (white count) .. | 1oz (30 cc) |
| Water (distilled) | General | 1 pint |
| Xylol | Lens. | 1oz (30 cc) |

Diseases In Which Laboratory Tests Are Of Especial Value. The diseases are given in alphabetical order. The principal objects to be examined are enumerated; words in light face capitals represent the most important laboratory findings. Words in black face represent tests which will usually require the services of a laboratory specialist.

TABLE No. IV.

ACTINOMYCOSIS—

1. Pus from abscesses (or sputum)—SULPHUR GRANULES OF THE RAY FUNGUS.

AMEBIC DYSENTERY amebiasis.

1. Feces and pus from abscesses—AMOEBA DYSENTERIAE OR ENTAMEBA HISTOLYTICA.

ANEMIA—

1. Blood—ABSOLUTE AND DIFFERENTIAL LEUCOCYTE COUNT.
—HEMOGLOBIN TEST.
—BLOOD PICTURE—microscopic.

ANIMAL PARASITES—

1. Blood—BLOOD PICTURE—ESP. EOSINOPHILIA AND PARASITES.
—HEMOGLOBIN.
2. Feces—PARASITES OR OVA
—OCCULT BLOOD.

ANTHRAX—

1. Purulent discharge—BACTERIA.
2. Blood culture—BACTERIA.

APPENDICITIS—

1. Blood—ABSOLUTE AND DIFFERENTIAL LEUCOCYTE COUNT.

ASTHMA (bronchial)

1. Blood picture—EOSINOPHILIA.
2. Sputum—EOSINOPHILIC LEUCOCYTES.
—CURSCHMAN'S SPIRALS.
CHARCOT LEYDEN CRYSTALS.

BRAIN TUMORS.

or

TUMOR-LIKE PROCESSES.

1. Blood picture—LYMPHOCYTOSIS.
2. Cerebro-spinal fluid—NOGUCHI'S BUTYRIC ACID }
TEST (Positive Wassermann) } —in syphilis.
—TRACES OF BLOOD—in cerebral hemorrhage.
3. Urine—TRANSITORY GLYCOSURIA.

BRONCHIECTASIS.

1. Sputum—TRISEDIMENTATION.
—PUS CELLS.
—FATTY ACID CRYSTALS.

BRONCHITIS. (Capillary.)

1. Sputum—MUCOID OR MUCOPURULENT.
—PUS CELLS AND EOSINOPHILES.
—BACTERIA.

BRONCHO-PNEUMONIA.

Same as Capillary bronchitis.

BUBONIC PLAGUE.

1. Blood—Slow coagulation time.
—ABSOLUTE AND DIFFERENTIAL LEUCOCYTE COUNT.
—BACTERIA.

CANCER.

1. In general—Tissue examination.
2. Of Stomach.
 - A—Gastric contents—ABSENCE OF FREE HYDROCHLORIC ACID.
 - INCREASE OF LACTIC ACID.
 - OCCULT BLOOD.
 - B—Feces—OCCULT BLOOD.
3. Of Kidney—HEMATURIA.
4. Of Pancreas—STEATORRHOEA.
5. Of Uterus—Uterine scrapings.

CHLOROSIS.

1. Blood—ABSOLUTE AND DIFFERENTIAL COUNT.
- HEMOGLOBIN.

CHOLERA (Asiatic.)

- . Feces—Bacteria.

CONJUNCTIVITIS.

1. Discharges—BACTERIA.

CYSTITIS.

1. Urine—PUS.
- BACTERIA.
- CHEMICAL ANALYSIS.

DIABETES.

1. Urine—SUGAR.
- ACETONE.
- Diacetic acid.
- B-oxy-butyric acid.

DIPHTHERIA.

1. Smear and Culture—BACTERIA.

EMPHYSEMA.

1. Blood—BLOOD PICTURE—HYPEREOSINOPHILIA.

ENDOCARDITIS.

1. Blood—LEUCOCYTE COUNT.
- Bacteria.

FILARIASIS.

1. Blood—PARASITES.
- DIFFERENTIAL COUNT.

GLANDERS.

1. Discharge from nose and lesions—Bacteria.

GONORRHOEA.

1. Discharge—BACTERIA.
2. Urine—PUS AND SHREDS.

HEART DISEASE—Chronic Valvular.

1. Sputum—HEART LESION CELLS.

HYPERACIDITY OF STOMACH—Gastrosuccorrhoea acida.

1. Stomach contents—HYPERCHLORHYDRIA.
- TRISEDIMENTATION OF VOMITUS.

HYDATID DISEASE.

1. Fluid from cyst, sputum, etc.—HOOKLETS.

INFLUENZA.

1. Sputum—BACTERIA.

INTESTINAL HELMINTHIASIS—See Animal Parasites.

LEAD POISONING.

1. Blood—Blood picture—Basophilic granular degeneration.

LEPROSY.

1. Blood from nodules—Bacteria.

LEUKEMIA.

1. Blood—ABSOLUTE AND DIFFERENTIAL LEUCOCYTE COUNT.

LUNG ABSCESS AND GANGRENE.

1. Sputum—PUS CELLS.
—ELASTIC TISSUE.
—FRAGMENTS OF LUNG.
—BACTERIA.

MALARIA.

1. Blood—SPECIAL STAIN FOR PLASMODIUM.

MEASLES.

1. Blood—DIFFERENTIAL LEUCOCYTE COUNT.

MENINGITIS.

1. Blood—ABSOLUTE AND DIFFERENTIAL LEUCOCYTE COUNT.
2. Cerebrospinal fluid—BACTERIA.
—DIFFERENTIAL CELL COUNT.

MYELOMATOSIS.

1. Urine—BENCE JONES' PROTEIN.

NEPHRITIS.

1. Urine—CHEMICAL EXAMINATION—ALBUMIN.
—MICROSCOPICAL EXAMINATION—CASTS, etc.
—Permeation test.
2. Blood pressure—

OTITIS MEDIA AND MASTOIDITIS.

1. Discharge—BACTERIOLOGICAL EXAMINATION.

PARESIS.

1. Blood—Wassermann.
2. Cerebrospinal fluid—ABSOLUTE AND DIFFERENTIAL LEUCOCYTE COUNT.
—NOGUCHI TEST.

PNEUMONIA.

1. Sputum—BACTERIA.
2. Blood—DIFFERENTIAL LEUCOCYTE COUNT.
3. Urine—CHLORIDES.

PSEUDOLEUKEMIA—Hodgkin's disease.

1. Blood—ABSOLUTE AND DIFFERENTIAL LEUCOCYTE COUNT.

PYELITIS.

1. Urine—PUS.
—BACTERIA.
—OCCULT BLOOD.
—Permeation test.

RABIES.

1. Brain tissue—Negri bodies.

SCARLATINA.

1. Blood—DIFFERENTIAL LEUCOCYTE COUNT.

SEPTIC INFECTIONS.

1. Blood—ABSOLUTE AND DIFFERENTIAL LEUCOCYTE COUNT.
—Bacteriological examination.
2. Pus—BACTERIA.

SYPHILIS.

1. Primary lesion—(Smear for specific bacteria)
 2. Secondary lesion
 3. Tertiary—
 4. Tabes and G. P. I.
- | | |
|---|-------------------------------|
| } | Blood—Wassermann. |
| } | Cerebro-spinal fluid—NOGUCHI. |

TETANUS.

1. Discharge—Smear for specific bacteria.

TONSILLITIS.

- 1. Exudate—BACTEROLOGICAL EXAMINATION.
- 2. Blood—DIFFERENTIAL LEUCOCYTE COUNT.

TRICHINOSIS.

- 1. Blood—HYPEREOSINOPHILIA.
- 2. Feces—PARASITES Adults or embryos.
- 3. Muscle tissue—Trichinella embryos encysted.

TRYPANOSOMIASIS.

- 1. Blood—DIFFERENTIAL LEUCOCYTE COUNT.
—TRYPANOSOMES.
- 2. Cerebrospinal fluid—TRYPANOSOMES.

TUBERCULOSIS.

- 1. Sputum—TUBERCLE BACILLI.
- 2. Blood—LYMPHOCYTOSIS.
- 3. Tissue—Tubercles.
- 4. Reaction—TUBERCULIN.

TYPHOID FEVER.

- 1. Blood—WIDAL—MACROSCOPIC.
—Widal—Microscopic.
—Bacteria.

TUMORS—in general.

- 1. Tissue—Microscopic examination.

VINCENT'S ANGINA.

- 1. Exudate—Bacteriological examination.

In conclusion we desire to acknowledge the assistance of A. M. Alden in the making of the illustrations accompanying this article and to thank the many friends who have made helpful suggestions.

QUESTIONNAIRE CONCERNING THE
"MODEL LABORATORY FOR THE GENERAL PRACTITIONER."

- 1. Should every general practitioner perform all of the tests given?.....
- 2. Should the several practitioners of a small city arrange for a common laboratory?
- 3. Should the physicians of a large city where special laboratories are available, do their own laboratory work?
- 4. How large (population) should a city be before it is advisable to establish a special laboratory in charge of a full-time laboratory worker?
- 5. In counties that have no large cities, is it advisable for the physicians of the county to arrange for a county laboratory with a special laboratory worker in charge?

6. Should every physician living in a community in which there is no laboratory specialist, own his own microscope?
.....
7. Size of room recommended.
 - a—O. K.
 - b—Too large or too small?
If so, how large should it be?
8. Is it advisable to have a special laboratory room?
or
Is it sufficient to use a "corner" of another room?
If so,—which room,—drug, examination, etc.
9. Kinds of examination as recommended.
 - a—O. K.
 - b—Too many?
If so, what would you omit?
.....
.....
.....
.....
 - c—Too few?
If so, what would you add?
.....
.....
.....
.....

THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

EDITORIAL

The Annual Session 1914.

Arrangements for the 1914 Session are now complete, and the Scientific Committee and the Section Chairman venture to hope that the members will feel that the trip to Sioux City will be well worth their while. Attention is here called to a few of the features of the 1914 Session.

Dr. Henry Albert will exhibit at the West Hotel his Model Laboratory for the General Practitioner. A physician will be in charge to demonstrate and explain the various features of this Laboratory. It is thought by those who have seen Dr. Albert's model, that this will be one of the most interesting and instructive features of the 1914 Session.

An especial effort has been made to make the program an interesting one every minute of the time from 9:00 o'clock Wednesday morning, until Friday noon.

The President's address will be delivered Wednesday morning, while both the Oration in Medicine and the Surgery are to be given on Friday morning. President Dean had tried especially hard to make the Friday morning program a strong one. The following list of names attest his success. L. W. Littig, Davenport; W. L. Bierring, Des Moines; O. J. Fay, Des Moines; D. C. Brockman, Ottumwa; Donald Macrae, Council Bluffs; J. F. Herrick, Ottumwa; J. T. Strawn, Des Moines.

Our Guests; Dr. Arthur Dean Bevan's address on Surgery, is entitled, "Borderland Cases and Team Work in Surgery". No member should miss this address which will be given on Thursday morning.

On Thursday afternoon Dr. Hugh T. Patrick will deliver an address on "Some Ordinary Headaches". Dr. Patrick always has something worth listening to, and the member who fails to hear this address will suffer great loss.

Dr. Robert Levy on Wednesday evening, will deliver an address on "The Significance of Laryngeal Manifestations, during the course of Pulmonary Tuberculosis, based upon a study of five hundred cases".

The Wednesday evening meeting will be entirely taken up by the Specialists, as in addition to Dr. Levy, Dr. Gratiot of Dubuque will discuss the tonsil in its relation to systemic infections, while Dr. Pearson of Des Moines, will discuss the relation between sinus infections and general infections, and Dr. Breene, of Iowa City, will discuss the mouth as a source of systemic infection.

This evening's program in itself should pay the members for the time spent in visiting Sioux City.

Entertainment; By way of entertainment, the Woodbury County Medical Society will on Thursday evening extend a Luncheon, Smoker and Vaudeville at the Auditorium to members of the Iowa State Medical Society.

On Wednesday evening, A theatre party will be given for the visiting Doctor's wives, and on Thursday afternoon, there will be a trip to Riverside for the Doctor's wives.

Transportation; For the convenience of members living in South Eastern Iowa, who do not have a more convenient way to reach Sioux City, the Milwaukee Railroad has arranged to run a sleeping car, or sleeping cars as may be needed from Des Moines to Sioux City on the night of May 12th. The sleeper or sleepers if more than one are needed, will be ready for occupancy at the Union Station at 9:00 P. M. May 12th, and will leave for Sioux City at 1:10 A. M. arriving in Sioux City at 8:40 A. M. Wednesday May 13th. Breakfast can be had in the dining car attached to this train so that on arriving, members will have to stop at "The West" and register, and then go to "The Martin" in time for the opening meeting at 9:00 A. M.

Members desiring to take advantage of the sleeping cars from Des Moines to Sioux City, should write or telegraph at once to the Milwaukee's City Passenger agent Des Moines, whose name and address may be found in the advertising pages of this month's issues of this Journal. No sleepers are regularly run between Des Moines, and Sioux City.

Consult these advertisements and attend the meeting May 13-15.

While you are now in the mood, read carefully every other advertisement in this issue. Patronize the advertisers, they assist very materially in giving you a good Journal.

A Model Laboratory.

The Chairman of Section of Medicine has arranged with Dr. Albert to get up a "model laboratory" for the general practitioner, to be exhibited at the Sioux City meeting of the Iowa State Medical Society. The importance of laboratory connection with hospital or office practice is so well known to the practitioner of today that no words need be said in its defense. The practical difficulty always is that the practitioner does not see how he can arrange for suitable laboratory work. Everybody must know that unless laboratory work is reliable it is of no value, and is in fact misleading, hence loose jointed laboratory work is but little recommended.

Dr. Luckey desires in a public way to express his gratitude to Dr. Henry Albert and Dr. Mildred E. Sheetz for the interest they have taken in this matter. Dr. Luckey realizes very fully that workers in this special line would be in a better position to develop

a scheme that would work out, than others trained in different channels. Dr. Albert and Dr. Sheetz have given this matter a good deal of thought and we would suggest a careful reading of the description of their laboratory, and a study of the model which will be on exhibition at Sioux City. Dr. Sheetz will be in the laboratory the entire time of the meeting of the Society, in order to make the necessary demonstrations. Dr. Albert will also be present as needed to superintend the work.

The Iowa State Medical Society and Its Journal.

Practically all the states in the Union publish a state journal. There are a few states like Minnesota, North and South Dakota, Vermont and Virginia, that contract with private journals for the publication of their transactions and such society matters as they desire to present to the members of the several state societies. They are in fact state journals but are not owned by the State Society. In a few instances several states have joined, as for instance, Oregon, Washington, Idaho, and Utah, and publish a journal, which is known as "Northwest Medicine." It is owned jointly by these four state societies. Other states are coming into line and publish a journal which they entirely control. There are therefore 25 states having their own journals, owned by the state, Arizona with a circulation of 400 and New York with a circulation of 8,300.

The value of state society ownership of its medical journal is apparent in that the state has full control over the character of advertising, and over the ethical questions. Most of the state societies have a medical defense feature so that it will be seen that a state medical society becomes a business organization for the development of ethical and business problems which confront the profession. Members of the medical profession who have had a watchful eye on the evolution that is taking place in the practice of medicine, come to realize more and more the importance of studying economic problems relating to the profession. We take into account therefore the protection of the profession against the growing tendency to malpractice suits growing out of the fact that the business world is now holding the doctor to a stricter accountability for the results of his work. In addition to this the development of industrial problems in which the Doctor now finds himself to be an important factor, and perhaps the most helpless one of all on account of his inexperience in relation to business matters and on account of his willingness to become a secondary factor in our modern national industrial evolution. The work of editing a state journal is correspondingly increasing, requiring a closer watchfulness of the events that are taking place, and further a knowledge of the conditions that are arising and a fair presentation of these subjects to the profession. Many of the special journals deal with scientific discussions entirely, but a journal that undertakes to lead public professional opinion,

must be in possession of more exact knowledge of what is taking place, not only in his own state but outside. The Journal of the American Medical Association the last ten years has grown from a scientific medical journal to a journal that has now in addition to its scientific work, a gathering of information on all sorts of subjects of interest to the profession. In order to do this the Journal has been obliged to provide very diligently for a large income outside of subscriptions, in the way of advertising. Now the state journal must supplement the Journal of the A. M. A. insofar as relates to matters in the individual commonwealth, and in order to meet the expense incident to this, some additional income must be provided in the way of advertising. Those who have things to advertise, have an idea that a medical journal is devoted exclusively to medical matters, and that the advertising of matters outside of medicine goes to lay journals which have to do with other things than surgical operations, pills, powders, etc., losing sight apparently of the fact that doctors are purchasers of the commodities of life, and feel that doctors are not interested in them or do not have occasion to use them, and therefore the general advertiser feels that he reaches only a limited number of consumers. We have had difficulty in securing advertisements on account of the fact that Iowa has so few industries that can reach the profession only. States having large cities have more to offer to the public than we have in our state. Another factor to be taken into consideration is the belief among advertisers that doctors are not helpful to the sale of their products, and fail to use their influence in extending the market of the advertising interest. We have made a special effort in Iowa to secure advertisements of hospitals and hotels that cater more or less to the general public and want public patronage, but think that if they advertise in the journal it helps them but little. As suggestive of this we publish a letter received from Mr. Donahue, proprietor of the Hotel Colfax. Mr. Donahue says: "I thank you very kindly for your letter of recent date. I am not placing any advertising copy of Hotel Colfax in any Medical Journal at the present time. I have not found same to be profitable to me in anyway. When I ran copy in the Iowa Journal some time ago I did not even get an inquiry. I am sorry to have to make this statement but it is a fact. I have run a copy of considerable size in The Medical Herald of St. Joe also the Medical Journals of Omaha and Kansas City with little results, and these papers carried copy in exchange for hotel accommodation and I have discontinued the copy."

With this sort of sentiment, we can see that few Iowa institutions are advertising whereas in other states there are a large number of sanitoriums and hotels that have the same kind of patronage as the Hotel Colfax, that advertise in their respective state journals, and furnish a considerable amount of revenue for the maintenance of the journal. If Mr. Donahue and others like him could be made

to see that the profession is interested in their home institutions, we could no doubt secure a very marked addition to our advertising patronage. The Kentucky State Journal for instance, receives an income of upwards of \$6000. a year from advertising; the Michigan Journal receives between \$3000. and \$4000. a year from advertising. States like Michigan, Wisconsin, Kentucky, and Texas, furnish enough advertising matter to their journal so that the Journal is obliged to draw but very small sum from the general income of the State Society. The Iowa State Journal is published more economically than any of the other state journals of its size, and yet, on account of want of advertising patronage we are obliged to draw more heavily than we would like, upon the State Society funds, and if the profession over the state would take a deeper interest in the professional matters outside of merely bread and butter getting, the Journal might be very nearly self sustaining from its advertising patronage alone. During the past year we have received from advertising \$748.47 which is an increase of \$446.02 over the year before. The cost of the Journal of the Iowa State Medical Society for the twelve months ending with the March issue, has been \$3,758.79. The expense of the Texas Medical Journal for the year 1913 was \$7,812.85. Income from advertising \$4,571.13. For instance, the salary paid the editor of the Texas Medical Journal is \$2000.00, its book-keeper \$540.00, and stenographer \$630.00. The cost of the Kansas Medical Journal \$2,386.86, and the New Jersey Medical Journal \$3,231.75. Each of these journals has 56 pages.

Employer's Liability or Workmen's Compensation.

On July 1st the insurance feature of the Workmen's Compensation Act passed by the last Legislature, goes into effect. This law provides in addition to compensation to the employe, for the injury received, a provision for two weeks surgical attendance to be paid by the employer. The various governments of Europe and the states that make up the United States have had under consideration a plan for a more scientific and economical care of men engaged in industries. Germany was the first to take this matter up in any scientific way and provide for the medical and surgical care of industrial classes. Every factory, private individual, every corporation of whatever character, that employ men or women are required to pay a tax to the Government, and this is added to by grants from the Government, and a small assessment from employes to create a fund for medical and surgical care of sick or injured employes. The provisions made imposed a heavier burden upon the medical profession than upon any of the parties concerned. In Germany at the present time great dissatisfaction exists among the medical profession, and there is an acute state of antagonism between the Government and the profession as to what would be a fair compensation. This has not yet been settled. It is quite possible that some compromise may

be made, in fact signs are indicative of it, by which the medical profession will receive better compensation. In England through the Lloyd George Bill, a Workmen's Compensation Act is now in force. The profession resented the unfairness of the measure as it cast upon them an excessive share of the burden, and after some compromise the provisions of the Lloyd George Bill have been generally accepted. The benefits to the laboring classes of these employe's compensation acts were so apparent that the question began to be agitated in the United States, and now we have several states which have adopted a compensation act of some kind. There are marked differences in the laws in the different states. The question of insurance of workmen and the fixing of compensation to physicians who may be employed, is in the hands of an Industrial Insurance Commission, and the fee is not specifically provided for in the Act.

The law of the state of Washington, Section 24, under the head of "Conduct, Management and Supervision of Departments" says under Subdivision 4, "Supervise the medical, surgical, and hospital treatment to the intent that the same may be in all cases suitable and wholesome." (There is no fund or provision for payment of charges for ambulance, physician, surgeon, hospital, nurse, medicine, or surgical appliances. The "1st aid" provision was stricken from the proposed Act before passage by the legislature.)

The Illinois Law, Section 27, says, "This Act shall not affect or disturb the continuance of any existing insurance, mutual aid, benefit relief association or department, whether maintained in whole or in part by the employer, or whether maintained by the employes, the payment of benefits of such association or department being guaranteed by the employer or by some person, firm, or corporation for him.

The Ohio Law, Section 42, provides: "In addition to the compensation provided for herein, the board shall disburse and pay from the sate insurance fund, such amounts for medical, nurse and hospital services and medicine as it may deem proper not, however, in any instance, to exceed the sum of two hundred dollars; and, in case death ensues from the injury, reasonable funeral expenses shall be disbursed and paid from the fund in an amount not to exceed the sum of one hundred and fifty dollars, and the board shall have full power to adopt rules and regulations with respect to furnishing medical, nurse and hospital services and medicine to injured employes, entitled thereto, and for the payment therefor."

The Wisconsin Law provides as follows: "Section 2394-26. Nothing in sections 2394-3 to 2394-31, inclusive, shall affect the organization of any mutual or other insurance company, or any existing contract for insurance of employers' liability, nor the right of the employer to insure in mutual or other companies in whole or in part, against such liability, or against the liability for the compensation provided for by sections 2394-3 to 2394-31, inclusive, or to provide

by mutual or other insurance, or by arrangement with his employees, or otherwise, for the payment to sue employees, their families, dependents or representatives, or sick, accident or death benefits in addition to the compensation provided for by sections 2394-3 to 2394-31, inclusive. But liability for compensation under sections 2394-3 to 2394-31, inclusive, shall not be reduced or affected by any insurance, contribution or other benefit whatsoever, due to or received by the person entitled to such compensation, and the person so entitled shall, irrespective of any insurance or other contract, have the right to recover the same directly from the employer; and in addition thereto, the right to enforce in his own name, in the manner provided in section 2394-3 to 2394-31, inclusive, the liability of any insurance company which may, in whole or in part, have insured the liability for such compensation; provided, however, that payment in whole or in part of such compensation by either the employer or the insurance company, shall, to the extent thereof, be a bar to recovery against the other of the account so paid, and provided, further, that as between the employer and the insurance company, payment by either directly to the employee, or to the person entitled to compensation, shall be subject to the conditions of the insurance contract between them."

The Law of Iowa, Part III, provides as follows: "Section 42. Every employer, subject to the provisions of this act, shall insure his liability thereunder in some corporation, association or organization approved by the state department of insurance. Every such employer shall within thirty (30) days after this act goes into effect exhibit on demand of the state insurance department evidence of his compliance with this section. And if such employer refuses, or neglects to comply with this section, he shall be liable in case of injury to any workmen in his employ under part one (1) of this act.

Section 43. For the purpose of complying with the foregoing section, groups of employers by themselves or in an association with any or all of their workmen, may form insurance associations as hereafter provided, subject to such reasonable conditions and restrictions as may be fixed by the state insurance department and membership in such mutual insurance organization as approved, together with evidence of the payment of premiums due, shall be evidence of compliance with the preceding section.

Section 44. Subject to the approval of the Iowa Industrial Commissioner any employer or group of employers may enter into or continue an agreement with his or their workmen to provide a scheme of compensation, benefit or insurance in lieu of the compensation and insurance provided by this act; but such scheme shall in no instance provide less than the benefits here secured, nor vary the period of compensation provided for disability or for death, or the provisions of this act with respect to periodic payments, or the percentage that such payments shall bear to weekly wages, except that

the sums required may be increased; provided, further, that the approval of the Iowa Industrial Commissioner shall be granted, if the scheme provides for contribution by workmen, only when it confers benefits in addition to those required by this act commensurate with such contributions.

Section 45. Whenever such scheme or plan is approved by the Iowa Industrial Commissioner, he shall issue a certificate to that effect, whereupon it shall be legal for such employer, or group of employers, to contract with any or all of his or their workmen to substitute such scheme or plan for the provisions of this act during a period of time fixed by said department.

Section 46. Such scheme or plan may be terminated by the Iowa Industrial Commissioner on reasonable notice to the interested parties if it shall appear that the same is not fairly administered, or if its operation shall disclose latent defects threatening its solvency, or if for any substantial reason it fails to accomplish the purpose of this act; but from any such order of said Iowa Industrial Commissioner the parties affected, whether employer or workman, may, upon the giving of proper bond to protect the interests involved appeal for equitable relief to the district court of this state.

Section 47. No insurer of any obligation under this act shall either by himself or through another, either directly or indirectly, charge or accept as a commissioner compensation for placing or renewing any insurance under this act more than fifteen (15) per cent of the premium charged."

It will therefore be seen that in the five states out of the sixteen or seventeen that have acts of this kind, that the provisions for insuring employes is in the hands of commissions, and it appears that the "Employer's Mutual Casualty Association of Iowa" is operating under the authority of Industrial Commissioner Warren Garst. This shows that we are not to deal, so far as fees are concerned, with any legislative enactment directly, but indirectly with the Commissioner. This Employer's Mutual Casualty Association of Iowa has undertaken to form a schedule of fees for the profession and enter into contracts with medical men for the care of injured employes. This operates in two ways; it makes every physician employed by this casualty association, a contract doctor, and it operates in securing to the injured employe such skill as is willing to enter into the contract. The corporation has complied with the law when it has provided for the payment of surgeons fees for the time indicated (two weeks). Without going at present into a discussion of the merits of the question, we desire to call attention to the situation as it exists in Iowa. The doctors have not been consulted so far as I know, in the matter and yet they are among the most important factors involved. It seems but fair and right that the doctor should have been carefully considered in the question of what would be fair compensation. The medical journals have been calling attention for the past

year or more to the scheme, and so far as I know the profession itself has not undertaken to protect itself by any sort of an organization or by taking any part in formulating a plan that might be agreeable to them in these compensation acts. In New York and Chicago economic clubs been formed for the protection of the interests of the medical profession. It will be seen that all over the country there is a growing tendency to use the time and skill of the medical profession for the advancement of economic ideas without giving the profession an opportunity of being heard. We are therefore suggesting that the county medical societies hold special meetings for the purpose of agitating economic measures. The Physicians' Economist Publishing Co., 71-W. 23rd St., New York City, is publishing a journal entitled "The Medical Economist" which discusses subjects relating to the business of the medical man.

As these compensation acts do not include agricultural labor, the question is not of very material interest to the physician practicing in agricultural communities, but in industrial communities where manufacturing enterprises are active, the situation is quite different.

We desire to say it now and most emphatically, that these employes compensation laws will be the laws of the future. There is no possibility of escaping their effects. The only thing we can do is to see that we are not left out of consideration. It is true that a reasonably planned compensation act will be an advantage to the medical profession in that there will be no bills to collect from the individual employee, and whatever services the doctor rendered the employee will be paid in money, and there will not be the great loss to us in the future as in the past on account of non-payment of bills, but at the same time we must be careful that the compensation received for the care of the employee will not be less than we have been receiving in the past, taking into account the losses sustained from non-payment of bills. We must see that private companies are not receiving great financial advantage from converting the doctors into contract doctors. In some of the states it is provided that a lump sum shall be paid for certain classes of injuries, which shall include doctor's fee and hospital fee. In Iowa it is based upon the plan of so much per treatment, so much per visit, and so much per dressing, and the remainder of the disability will have to be looked after by the doctor without compensation or taking the chances of employee paying it.

Dr. D. S. Fairchild,
Iowa State Medical Society.
My Dear Doctor:—

March 25th, 1914.

In reply to yours of the 17th instant, beg leave to state that we are sending you under separate cover a copy of the Ohio Act, also a copy of an article which appeared in the State Medical Journal.

In previous articles by this department, in particular, in addresses delivered before local and district medical societies, we paid

particular attention to the comparison of the Ohio Act with other Workmen's Compensation Acts of the United States, and called particular attention to the condition of the profession in foreign countries.

One of our very first and greatest principles has been to avoid CHEAP CONTRACT WORK, and another has been to avoid any conditions, which might possibly lead in the future, to contract work, as it is applied in Germany and England, as examples of the foreign countries.

We believe that the profession of this state has watched the Berlin and London letters as published in the Journal of the American Medical Association, and it is difficult for us to find an intelligent and up-to-date physician in this state who wishes the CHEAP CONTRACT WORK as exhibited by Germany, with her competitive bidding for physician's services by the numerous Friendly and other societies of like nature. We are also sure that they do not wish Industrial Accident Work to have any of England's cheap contract work, as represented by the numerous sickness and lodge societies, and as further represented by the penal practice, under the recent National Insurance Act, in which the compensation amounts to approximately \$2.50 per case; fixed by the Government and applying to all physicians, regardless of the nature and extent of the injury, but specified as per so much for any case treated.

We are anxious to see that no such condition ever prevails in this State. This is one of the subjects in which we are particularly interested.

No doubt, you anticipate that sociological conditions are different regarding the foreign countries and this country, however, the fact remains that there are but few ways in which medical attention, under Workmen Compensation Acts, can be rendered. One of the ways is that as represented by the foreign countries, and another is that as represented by some of the states of the Union, and which are objectionable to the state of Ohio at the present time. We mean by this second way, that in most of the states of the Union, the Liability Insurance Companies are still commercializing this proposition, and are dealing in this great HUMANITARIAN question with the idea of profit. It is well known and is becoming better known that where this question of profit must be considered, that the premium must be higher, and the temptation of the Liability Insurance Companies will always be great, to take care of the Medical side of the question at the expense of all the physicians, by instituting CHEAP CONTRACT WORK, and as has been shown in some of the states, by even building their own hospitals.

We have the ideal way of taking care of this situation, which is presented principally by the fact that the state pays for the administration, and that there is no profit in handling of this question to any one, except the legitimate profit to the physician, hospital, etc.,

for services rendered. This makes the premium to the employer lower than in other states. It further enables us to get away from the cheap contract work. We discourage it, and have done more than this. If you will note section 42, you will note that the whole question of Medical Attention is given over to the Industrial Commission.

Our average medical attention per case, taking all injuries, a great per cent being minimum injuries, is close to \$10.00.

If you will investigate you will find that we have less trouble and more co-operation on the part of the Medical Profession in this state than under any Workmen's Compensation Act in existence. The reason for this can be probably stated as follows: first, the elimination of the Liability Insurance Companies and the question of profit from a man's injuries; second, the throwing open of the doors to the whole of the Medical Profession, which means an equal opportunity to all, and special privilege to none.

The employers and employes, by education and experience, will automatically eliminate the poor and unqualified physician in this work. They will likewise advance and use the best qualified men in this work, for the reason that they will soon find out that they are the ones who are paying for the poor surgical attention; the employer by his increased premiums; the employee by the unnecessary disability, probably permanent in character.

Our Medical Department, at the present time, consists of the Chief, Medical Examiner, three assistant examiners, and three stenographers, at the home office, and of one Local Medical Examiner, in each and every one of the eighty-eight counties of the state, and of special Eye and Ear Examiners for different districts; in other words, this whole question is placed by the Industrial Commission, in the hands of the Profession themselves, to work out; maintaining the above department to facilitate the handling of the work, and determining the exact disability, etc., present, as necessitated by the law, and further to prevent unnecessary charges, and cases of exaggeration, malingering, etc.

As to a uniform plan for all of the states, relating to the question of compensation for medical services, we believe that it would assume a rather difficult aspect, for the reason, as you can note from the above, the most of the states are evidently going to be placed at a disadvantage on account of the Liability Insurance Companies still having hold of this question. We do not believe that the medical side of this question, which is the big side, is going to assume a better aspect for the reasons as stated above; but, in this state, we are sure, and do know, that as the physicians become better acquainted with the act that our troubles are growing to a minimum; and, we are obtaining the co-operation of a great majority of the physicians.

Very respectfully yours,

A. W. Binckley, Chief, Medical Division.

Accident Insurance.

To The Editor:

I do not care to enter into a lengthy correspondence with you in regard to the matter of insurance work but will leave these few remarks with you for your consideration.

You know that it is the custom of the insurance companies to send all blanks to the insured and he takes them to his physician after he has made up his mind how much time he wants for indemnity. We have to fight it out with him then ask him to pay for it. Is a business man square with himself when he will ask the physician to assume such a rôle even though the physician is willing to act. Let me fill out my blanks alone and mail them separately and you pay for the information and you will begin to get something. You are in position to do us some good. Come along with the goods. Where was our legislative committee when the Compensation Act passed the house. As usual asleep. Where was our committee for the good of the State Society after the Act had passed. Asleep as usual. Now you know that 90 per cent of the state has been covered with contracts with physicians who have not been publicly informed through the State Journal of the evil of contract practice. I am familiar with the terms of these contracts and please let it be known that as yet no Grinnell physician has signed such a cowardly contract. What in the world our State Medical heads were thinking about when this Act passed that they did not make some effective protest and enlighten the mass of physicians over the state I do not get.

You men who are in control of the information on such subjects and who are entrusted both with the confidence of the corporations and the State Society alike have betrayed the physicians of this state into one of the most far reaching destructive influences that can be brought to bear on the efficiency of the general practitioner.

Finally perhaps Mr. Emery would welcome some sound and intelligent advice from the physicians. Would you take that burden. Your philosophical sense will tell you that there is no lasting good can come without at the same time being of the type that is universal. You cannot serve a corporation to their best interest without at the same time furnishing them with the kind of advice that would be good for all of us. Now perhaps you would have a great deal of difficulty in making Taft or Mr. Emery believe that. Taft thinks that people have not the right kind of intelligence to govern themselves. They showed him.

I think it would be an excellent idea to wise the physicians up on the contract practice. Could you give them a little notion of its present status in Iowa.

We have some notions on Physician's Defense but will not burden you with that now. Thanking you for your time, I am,

Very truly yours,

O. F. Parish, M. D., Grinnell.

The foregoing is a letter from Dr. Parish of Grinnell, in which we find some emphatic expressions of opinion in relation to accident insurance companies. Accident insurance companies or casualty companies are no doubt of very great benefit to the general public, but must widen their range of usefulness to a very material degree. The unfortunate fact is that an extremely useful and desirable thing has been commercialized to such an extent as to destroy a large part of its usefulness. The plan of insurance has been wasteful and the expenses have been so large that fully 50 per cent of the premiums have been paid in profits and expenses. In Germany expenses of all kinds, including accident prevention, absorbed but 14 per cent of the premiums; in Norway 12 per cent. There is no reason why a State Department or an Employees Mutual Membership wherein is obligatory upon all employees subject to the Compensation Act should not approximate these favorable results. In the United States where one-half of the premiums paid go to profits and expenses, add 100 per cent to the cost of compensation. In Norway and Germany, for instance, where expenses absorb but 14 per cent of the premiums, add only 17 per cent to the cost of indemnity as against 100 per cent in the United States.

The purpose of Industrial Insurance and Workingmen's Compensation is to place the burden of the accident upon the manufactured articles produced, and that the manufacturer will be obliged to adjust his prices in such a way as to meet this, and if the burden in one state becomes greater than the burden in a neighboring state, it will handicap industry to such an extent as to force it out of the state requiring a high cost of industrial protection to labor. The Compensation Act insofar as fixing the rate of compensation to the laborer, is not a matter that we of the medical profession are particularly interested. We are interested mainly in that which relates to the insurance of the industrial worker. Under our Iowa law, if a workman is injured, his employer is required to pay one-half time when incapacitated for a certain period, and to pay surgical, nurse, and hospital care for a period of two weeks. The law provides the employer shall have the privilege of naming the medical attendant, and if the workman refuses to accept the services of the surgeon provided, then he must pay his own doctor. After the two weeks time has expired, nothing further is provided for and it may be assumed that the burden of the further care will fall on the employee himself, and the doctor taking chances of collecting from the injured employee for further services. This is certainly a weak point in the law, for we know that there are many cases where the disability will last much beyond the two weeks. Now to keep down the burden of expense to the employer, contracts are made with medical men to perform certain professional services for a reduced fee. The argument presented is that in view of the fact that a doctor does not lose any bills for the treatment of injured employees, that he can afford

to do the work at the reduced rate which is provided in the contract. The unfair thing about this all is that the medical profession has not been taken into consultation, and has not had any part in determining what should be regarded as a fair compensation for services rendered. This is the common practice, I think, in all matters where doctors are concerned.

Referring to Dr. Parish's complaint that this thing has come upon the profession without their knowledge or consent, I desire to call attention to the fact that we have repeatedly through the columns of the Journal of the State Society, warned the profession of what was coming. We took occasion while in Europe during the past summer to study the situation there, and since returning I think we have had some notice of this in about every other number of the journal. Dr. Kime of Fort Dodge has prepared a valuable paper on this subject for the Iowa Medical Journal, and the Journal of the A. M. A. has for two or three years published letters repeatedly upon this subject, and it does not seem to me that there is any great reason why the medical profession should not have known what was in store for them.

The Legislative Committee can answer for itself as to its dereliction of duty for it is not probable that any act or combination of action on the part of the profession could have prevented the passage of the Compensation Act.

It has been believed by the lay press that the English Compensation Law was a just law. Some two years ago an article appeared in the Outlook advocating this English plan as a matter of justice to the employee. There cannot be much doubt that all the doctors engaged in practice among the industrial classes will sooner or later become contract doctors, and it will be necessary to adjust our ethical ideas in accordance with this. If the profession was strong enough in its determination to fight for its own interest, perhaps something could be accomplished, but the experience in England and Germany has shown that in countries where the number of medical men to the general public is much less than in the United States, they have not been able to accomplish much and have been forced to accept the situation. Apparently the only course left open to us is to join in some plan by which better conditions can be negotiated, so that the profession will fare better. Otherwise it will lead to cheap and inefficient service which is the intention of these laws to prevent.

The members of the profession who have succeeded in securing practice among the classes not included in this legislation, will, of course, not be much affected by these laws, nor will the practitioners in the agricultural communities be seriously affected. The burden will fall most heavily on those who are practicing in communities which have industries, and as Dr. Hills says in a private communication, the medical profession throughout the state should insist that

private commercial accident insurance companies should pay a reasonable fee for information furnished by the medical practitioner. It must be apparent to a business man that really valuable services cannot be secured without fair compensation, but it may be assumed that as long as the medical profession will without protest furnish the information without fee, that the business world will accept it, and so I think that all medical men dealing with accident insurance companies should insist on a fee for any real service, which they may render these companies. So far as our own office is concerned, we have never in the last fifteen years had any difficulty in securing reasonable compensation for all the advice, information and opinion we have rendered the accident insurance companies. We have insisted on this and the fee has been paid, and I believe that if other doctors would do the same thing, they all would be compensated. I am free to say that so far as I have any influence with accident insurance companies, that from this time on I will endeavor to see that such compensation is provided. Feeling as I do, that in the first place, services should be paid for, and in the second place, services will be much more valuable and much more freely given if they are paid for, there are many things connected with this whole business that ought to be considered, and it is our right, and as we have stated in another editorial in this same number, the county medical societies should have sessions for the consideration of economic questions, because they will constantly come up, and more in the future than in the past. We can see the handwriting which shows plainly that the medical profession must readjust their plan of work if they expect to hold their place as influential factors in the community and receive what is just.

Employers Mutual Casualty Association of Iowa.

Des Moines, March 25, 1914.

Dear Doctor:

Under the Workmen's Compensation Law which becomes effective on July 1st next, All Employers of labor, excepting farmers, will be required to furnish to injured employes for the first two weeks of incapacity at the employers expense, reasonable surgical, medical and hospital services.

Section 10-b of the law gives the employer the exclusive right to designate the physician and hospital through which the service will be furnished and if such service is refused, then the employer is, by law, relieved from paying for any service.

As the great majority of employers, i.e. factory owners, contractors, storekeepers etc., will become members of this Association, it follows that the law will give us the control of this business and to handle it for the best interests of all concerned, we are organizing our Medical Staff throughout the State.

There are many reasons why this business, being under absolute control of our staff, will be profitable to them, the principal one being the volume which is certain to result from the control, not counting the certainty of the fees.

We have about completed the organization, the larger towns having

been finished and the members of the staff are among the representative men of the profession.

To handle this extensive business it will usually require more than one doctor in a town and we would like to have you select your associate or associates as you desire, providing that you will agree to operate and have them operate upon the fee schedule which has been adopted by our Medical Board as per copy enclosed.

The scale is intended to apply only in a general way and the Association will always be open to consideration of any individual case upon its own merits. It is our intention to treat our staff in the very best manner possible for, upon the members, depends the success of our system. This is an Association of employers throughout the State and is to be conducted without profit to anyone, the expense being confined to reasonable pay for the service performed.

As we desire to complete the organization at a very early date, we will respectfully ask that you give us your answer as soon as you can and oblige,

Yours very truly,

John A. Eddy, Secretary.

Employers Mutual Casualty Association of Iowa.

Des Moines, April 1, 1914.

Dear Doctor:—

Your favor of March 28th, is received. We are sure you have not fully considered the condition which will exist after July 1st, next.

The pre-existing conditions cannot be used as a basis for operations thereafter. Every line of industry professionally or other wise is becoming commercialized, and while we personally view with some apprehension the complete revolution of the customs which have long been grounded in this state and country still we cannot close our eyes to the fact that such a revolution is taking place both politically and socially.

We will be confronted on July 1st, with a measure which is intended to solve an economic problem, that is, the workmans compensation act.

Under this act employers are forced to take care of their injured workmen and place the cost of such injuries upon their product thereby making society at large as consumers of that product pay the bill.

The cost of such will depend upon a measure upon the charges made by the surgeons for treating the injuries, and the legislature in all its wisdom gave to the industrial commissioner the absolute right to fix any fee which may be charged by either the Doctor or a lawyer in connection with the system, therefore, you as well as all the other Doctors will not be able to fix your own price on your services as you have in the past without legal regulation.

Heretofore a Doctor was called upon to treat an injured person, and under the law he could only look to such injured person for his pay, and the records will show that the Doctors generally did not receive pay for one half the services performed.

Under the new law the employer is forced to furnish certain services to his employes, but he can name the Doctor through whom such services shall be furnished.

To Avoid Interference on the Part of the Industrial Commissioner in the matter of Doctors fees, and to establish an organization whereby the business can be handled properly, it becomes absolutely necessary for us as representing the greatest number of employers in the state to select certain Doctors who will have the exclusive handling of the injuries in their respective districts, and to arrive at a basis upon which the calculation must be made in advance as to the ultimate cost of such services,

and the schedule of fees as sent you was arranged after full consideration of the extended advice secured by us.

We know fully that the schedule could not possibly apply to every case, but in a general way it has been acceptable to the leading men of your profession throughout the state of Iowa, and in the great majority of towns the staffs have been fully completed.

We know that the anaesthetic fee of \$3.00 will not be adequate in ten per cent of the cases, but we stand ready to consider any case on its individual merits.

We know that some Doctors are adverse to contracts, but we also know that such objections are really disappearing owing to the commercialization of the business as referred to above.

We are dealing with the leading physicians and therefore respectfully ask that you reconsider this proposition, look at it from a new light and let us hear from you further.

Yours respectfully,

John A. Eddy, Secretary.

Employers Mutual Casualty Association of Iowa, Home Office Des Moines.

Surgeon's Contract.

Schedule of Fees.

Contused, incised or lacerated wounds, burns, scalds, etc., the introduction of catheter, the removal of foreign bodies from accessible parts, such as eye, nose, throat, ear, etc.

| | First Treatment | Subsequent Treatments |
|--|------------------------|------------------------------|
| Ordinary visit, with necessary procedure in ordinary cases | \$ 1.50 | \$ 1.00 |
| Night visit, 9 P. M. to 7 A. M. | 2.00 | 1.00 |
| Office treatment | .75 | .75 |
| Removal of foreign body from eye | 1.00 | .75 |

Amputations, Etc.

NOTE; All after treatments at office take office treatment fee.

| | | |
|--|-------|------|
| Hip joint, thigh, shoulder joint or excision of such joints. | 40.00 | 1.50 |
| Leg, foot, arm, forearm | 20.00 | 1.50 |
| Hand | 15.00 | 1.50 |
| Ligation of important artery not in open wound | 10.00 | 1.00 |
| Ligation of important artery in open wound | 5.00 | 1.00 |
| Metatarsal or metacarpal | 5.00 | 1.00 |
| Two or more | 10.00 | 1.00 |
| Finger or toe | 5.00 | 1.00 |
| Finger or toe, two or more | 10.00 | 1.00 |

Fractures.

| | | |
|-------------------------------|-------|------|
| Upper arm | 10.00 | 1.00 |
| Forearm, one or both bones | 10.00 | 1.00 |
| Femur | 15.00 | 1.00 |
| Lower leg, one or both bones | 10.00 | 1.00 |
| Jaw, metatarsal or metacarpal | 5.00 | 1.00 |
| Ribs, one or more | 5.00 | 1.00 |
| Patella | 10.00 | 1.00 |
| Pelvis | 15.00 | 1.00 |
| Metatarsal or metacarpal | 5.00 | 1.00 |
| Finger or toe | 2.50 | 1.00 |
| Finger or toe, two or more | 5.00 | 1.00 |
| Scapula, clavicle | 5.00 | 1.00 |

| | | |
|---|--------------|------|
| Nasal bones | 5.00 | 1.00 |
| Compound fractures, add 20 % for first treatment | | |
| Dislocations. | | |
| Shoulder, elbow, knee | 10.00 | 1.00 |
| Hip | 15.00 | 1.00 |
| Wrist, jaw | 5.00 | 1.00 |
| Finger or toe, any number | 1.50 | 1.00 |
| Miscellaneous. | | |
| Trephining skull | 20.00 | 1.00 |
| Reduction of hernia when due solely to recent injury | 5.00 | |
| Reduction of strangulated hernia by taxis | 7.00 | 1.00 |
| Herniotomy | 25.00 | 1.00 |
| Enucleation of eyeball | 20.00 | 1.00 |
| General anaesthetic | 3.00 | |
| Special examinations with written report | 2.00 | |
| Autopsy, with report | 20.00 | |
| Autopsy, attending only with written report | 5.00 | |
| Testimony at hearing as to simple fact of injury | 5.00 | |
| Expert testimony | 15.00 | |
| X-ray photos, to be taken on order only | 3.00 to 8.00 | |

General Rules.

If more than one patient is treated at the same visit, the full fee will be charged for one and one-half of fee for the others.

If the injured has received more than one injury, fee to be charged for the most serious injury.

No charge shall be made for extraordinary detention. When assistance is necessary, one-third of the regular fee may be charged in addition, excepting that in cases where anaesthetic is administered the additional fee for such shall not exceed the schedule fee.

Services not enumerated in the schedule will be charged for at rates commensurate with those given.

Hospital visits shall be considered as "visits" unless two or more cases are attended upon the same visit when the full fee will be charged for one patient and 75 per cent of the fee for each other patient.

Surgeons shall report on all cases treated or examined on blanks to be provided and shall make supplementary reports as are required.

Surgeons shall furnish without charge all instruments, splints, bandages, medicines, anaesthetics or anything which may be considered by them necessary for treatment or operation.

Country visits: When outside of the city limits are necessary, an additional mileage of 30 cents for each mile beyond city limits traveled on the outbound trip will be allowed.

I accept the foregoing and will render to all cases coming under my care such treatment as in my judgment is needful.

Dated this.....day Signed

of191... Address

 Town

The Newer Mission Of The Doctor And Hospital.

The group of physicians who made up the Physicians Travel Study Tour on the voyage to Europe on the slow going but very comfortable S. S. Bremen, arranged a series of lectures and addresses. Among them was an instructive address by the well known neurologist, Dr. John Punton of Kansas City, with the foregoing title, which we abstract so far as it relates to hospitals.

"The Function of a Modern Hospital."

The real function of a well equipped modern general hospital is, therefore no longer considered by the leaders of our profession as well as the more enlightened citizens as an exclusive medical monopoly or private concern, even when owned and controlled by private interests and which may or may not have been built solely for convenience to subserve selfish interests or even for purely commercial reasons. Neither because it bears a religious name or tagged by some philanthropy does it necessarily represent the great cause of medical science, justice or religion. These are fallacies which no longer bear the scrutiny of modern public medical investigation and must give way to a higher state of efficiency, ethical order and moral system of medical practice.

Moreover, the modern hospital must be recognized as a great commercial plant where only good paying cases are received and discharged, and where physicians, surgeons, pathologists and specialists are most tempted to engage in envious bitter controversies, and haggle over petty differences in diagnosis and methods of treatment as well as the scientific aspects of certain kinds of operation.

Fortunately the leaders of our profession are realizing the futility of all such petty bickerings, as well as the absolute nonsense of the envious jealousy and commercial avarice which attends much of such practice. They also understand its practical, selfish, unethical aspects, and contrary to public belief and popular opinion are anxious to rid the hospital, dispensary and the general practice of such narrow minded, nefarious methods.

Those members of our profession who have its best interest at heart, therefore, believe that independent of its strictly technical, scientific, medical and surgical detail, the work of a modern and efficient hospital should include a close study of the social, humanitarian side of disease and suffering, and more strict attention paid to the investigation of worthy and unworthy applicants including their social and moral status as well as other conditions, which underlie the pathogenesis, spread and continuance of disease.

Admitting that these are often found to be beyond the province of the science of medicine to change or to even minister (for the disease of poverty, of depending children, of unemployment, of ignorance, or misfortune and similar social conditions, are not included in the set studies of a medical college curriculum), yet all unbiased phy-

sicians admit that these have a marked bearing as well as close relation to health as well as the cause and spread of disease.

In order that such social pathogenic factors can be intelligently understood and dealt with humanely they require rigid medical, social, legal, political and religious expert investigation by competent authorities and their appropriate treatment duly prescribed and administered.

The larger welfare work of a modern general hospital and dispensary therefore includes not only its purely scientific medical and surgical work, but also the rigid expert investigation of the social pathogenesis of disease and suffering.

“General Hospitals Not Dispensaries of Charity.”

Moreover a modern general hospital is no longer regarded as a dispenser of charity, even though the medical services are free or shorn of all monetary consideration. But its functions are now sufficiently enlarged to include a great and responsible public charge and philanthropic duty by its protection of all the citizens from not only the menace of uncontrolled contagious and loathsome disease, but also the fearful ravages of epidemics. So considered this newer mission of the doctor and hospital becomes a golden link in the great chain of the larger humanitarian social service welfare work now being inaugurated in the larger towns and cities of America for the sole purpose of making the lives of its citizens, and especially those of the underworld, worth living.

In view, however of the responsible nature of such service and its public exacting character the medical staff as well as other employes, should receive fixed salaries for such public services rendered and should be paid out of the city treasury, subject to the Board of Control.

In view of these radical newer changes in the services of the doctor and hospital created by modern public demand and which are admitted as necessary by the leaders of our profession, the question at once arises, How can they be made operative and effective? The answer is: By educating the laity and even the medical profession of their absolute need and just ethical demand for the greater benefit of mankind.

This can only be accomplished by a more united and magnanimous spirit and effort on the part of the medical profession as a whole toward public, social, welfare medical service.

National Insurance In Germany.

The first of January marks the culmination of an important struggle in Germany between the medical profession and the insurance societies through which the national sick and benefit insurance is administered. The grievance of the German doctors, as of the British, is that they are not adequately recompensed for panel work, and that free choice of physicians is not allowed. Negotiations be-

tween them and the insurance companies were pending thorough-out the past summer, but were frustrated by representatives of the companies.

Finally on October 26, a representative meeting of physicians, held in Berlin, voted that "on and after January 1, 1914, the insured population of Germany, Dresden, Hamburg, and Berlin excepted, shall not receive treatment through the insurance societies unless the latter meet the demands of the profession or the government sees fit to interfere." Following this action special meetings and conferences of medical societies and insurance agents were held on November 5 in Munich and Baden. The federation of insurance societies, however, refused to comply or to recognize the right of the doctors to organize the profession for the protection of the general practitioner.

On November 12 the Berlin Medical Society, at a special meeting, endorsed the action of the representative meeting October 26 by the passage of the following resolution:—

"In consideration of the fact that the manner in which the insurance societies desire to regulate the relation between the doctors and the societies under the new State Insurance Order most seriously imperils the freedom and independence of the medical profession, both of which are absolutely necessary for the continued scientific education and for the beneficial activity of the doctors, in the interest both of the patients and themselves, the Berliner medizinische Gesellschaft joins whole-heartedly with the German medical profession in its struggle with the managers of the insurance societies."

Thus matters have stood until the present time. If the doctors remain firm and united, they will effectually block the operation of the national insurance law on and after today. Either the companies must yield or the crown will intervene to settle the dispute.

We have not yet the subject of national insurance among the vexing problems of professional life and legislation in our country; but it may come to vex us sooner than we now expect. Meantime the experience of our German and British brethern is full not only of intense interest, but perhaps of profitable precedent.—The Boston Medical and Surgical Journal, January 1, 1914.

Scraps.

A little book came to hand a few days ago that gave us an unexpected pleasure, entitled "Scraps" from the pen of our old and much esteemed friend, A. G. Field, M. D., L. L. B., Des Moines.

Dr. Field opens the Preface with the modest statement that, "This compilation of little scraps is not in response to any pressing demand nor to supply any long felt want."

Anything Dr. Field says is listened to not only with pleasure, but with profit. His long years of experience, his deep and abiding

interest in scientific medicine has made him a prominent figure in Iowa medicine. The best seat and warmest corner at the medical fireside always await him. Dr. Field has been a member of the State Medical Society 49 years, was President of the Society in 1871, a charter member of Iowa Academy of Sciences, and was the first to suggest and work out the plan for a medical school in Des Moines, which afterwards became the Drake University School of Medicine. Our first acquaintance with Dr. Field was in January 1872 when we joined the State Medical Society. His dignified figure set off to the best advantage by a cape overcoat, impressed us greatly. This vision of Dr. Field of 42 years ago, has helped us materially in reading the little book before us in forming an estimate of the value of the medical missionary work, before schools, Sunday schools, literary societies, workingmen's institutes, etc., in the city of Des Moines. There are also papers before state and national medical associations and the American Association for the Advancement of Science. These 42 years passed before me with a pleasure which only two old fellows like Dr. Field and myself can fully appreciate. Age does not always blunt our faculties for only a few nights ago when two or three young scientists were trying to focus some pictures on a screen with rather indifferent success, Dr. Field suggested that if the camera was moved ten feet nearer the screen they would get better results, and so it proved.

Agreements to Split Fees Void as Against Public Policy—Including in Suit Fees for Assistant at Operation.

(McNair vs. Parr (Mich.) 143 N.W.R. 42). (Journal of the A.M.A.)

The Supreme Court of Michigan reverses a judgment recovered by the plaintiff for professional services in operating on the defendant for hernia and on his daughter for appendicitis, and grants a new trial. The court says that the defendant claimed, among other things, that at the time the causes of action arose there existed between the plaintiff and Dr. Stuck, who was then the defendant's physician, an unlawful agreement and combination, by which the plaintiff and Dr. Stuck were to divide the fee which the defendant was to pay the plaintiff for the surgical operations and professional visits mentioned in the plaintiff's bill of particulars, which combination was unlawful and void, as contrary to public policy, and in violation of the statutes and common law of the state.

It was the claim of the defendant that Dr. Stuck could not be the agent of both of the parties to the suit, while he was at the same time assisting in these operations as the family physician of the defendant: that he could not draw pay from both parties, without the knowledge of all the facts by the defendant, that any tacit understanding or agreement between the two physicians of any division of the plaintiff's fees between them would be against public policy and void; and that the defendant had a right to show that the plain-

tiff had charged an unreasonable sum for his services, in order to divide his fees with Dr. Stuck. That such a contract is against public policy the defendant cited a number of Michigan cases, also 9 Cyc. 481, 482; 34 Cyc. 1430. The court is of the opinion that the cited authorities support the claim of the defendant, and that any agreement of the plaintiff to split his fees with Dr. Stuck, without the knowledge of the defendant, would be void as against public policy.

The court also thinks that too strict a rule was applied in the cross-examination of the plaintiff, to the prejudice of the defendant, when the latter sought to show a tacit understanding between the plaintiff and Dr. Stuck, growing out of their former practice in other similar cases, in the matter of division of fees. Considerable latitude should be allowed in cross-examination when fraud is claimed.

There was error, too, in a refusal to charge the jury that they could not allow the plaintiff any money for the services of Dr. Stuck rendered at these operations. The plaintiff, after testifying that his bill was only for his personal work, changed his position and testified, in answer to a question by the court, that his bill included Dr. Stuck's bill. If the judgment rendered in the plaintiff's favor were to stand, the defendant might have to pay twice for the services of Dr. Stuck. That they were included in that judgment might be presumed under the charge of the court; but the value of such services did not appear. Dr. Stuck was not a party to or bound by that judgment, and might maintain a suit against the defendant for his services.

Ligneous Phlegmon.

About a year ago there appeared in the Journal of the A.M.A. an article by Dr. W. W. Grant of Denver, entitled "Ligneous Phlegmon of the Abdominal Wall." This paper suggests two cases seen with Dr. Hofstetter of Lyons about the same time. These cases appeared on the neck and were objects of considerable interest to both Dr. Hofstetter and myself. Both cases finally terminated by slow suppuration and absorption. In 1893 Reclus of Paris published a paper reporting five cases. The two cases that Dr. Hofstetter invited me to see in consultation were the only cases that I have ever had under my observation so far as I can remember.

When Dr. Reclus published his paper nothing seemed to have been known of this class of cases and they were denominated as ligneous phlegmon of the neck. Since that time a number of cases have appeared in literature, although the number reported is comparatively small. Only slight reference is made to these cases in the text books on surgery, although Lexer-Bevan, Keen and De Costa make brief allusions to the subjects. The reason for this apparently due to the fact that so little has been known of these cases until very

recently. Most of the cases have been reported in foreign literature and a considerable proportion of the cases have been diagnosed as malignant diseases. The Italians seem to have been most active in the investigation of the disease. Fasana in 1912 reported twelve cases and announced as the probable cause, bad health and trauma, the diagnosis is extremely difficult, which time alone can clear up. Pathological investigations have showed only inflammatory changes in the muscle with a large amount of granulation tissue, lymphoid-plasma cells, and polymorphonuclear leucocytes. There does not appear to be any specific bacillus. The treatment consists of incision and hot moist applications.

Reception in Honor of Emeritus Professors of Jefferson Medical College.

A reception preceded by a dinner, was given at the home of Mr. Daniel Baugh, of Philadelphia on the evening of December 2d, in honor of Dr. William W. Keen, Dr. James C. Wilson, Dr. W. Joseph Hearn, and Dr. James W. Holland, all of whom are emeritus professors at Jefferson Medical College. About three hundred physicians attended the reception, among the guests being Dr. Abraham Jacobi, Dr. Robert Abbe, Dr. Egbert Lefevre, and Dr. Joseph D. Bryant, of New York; Dr. E. C. Conklin of Princeton University; Dr. Edward Rice, president of the New England Association of Jefferson graduates; Dr. William T. Matlock, of Wilkesbarre, Pa.; Surgeon General Charles F. Stokes, United States Army; Surgeon General George H. Torney, United States Navy; Surgeon General Rupert Blue, United States Public Health Service; Dr. Llewellys F. Barker, of Johns Hopkins University; Dr. J. Ewing Mears, of Philadelphia; Dr. James Tyson and Professor Richards Pearce, of the University of Pennsylvania; Dr. James M. Anders, of the Medico-Chirurgical College, and the Rev. Dr. Russell H. Conwell, president of Temple University.

An Important Medical Affiliation.

It is announced in Science that the Cleveland (Ohio) City Hospital is to become affiliated with the medical school of Western Reserve University. The sum of \$1,000,000 has recently been raised for the further endowment of the school.

“The agreement which will be entered into by the city and the university will provide that all members of visiting staff of the City Hospital shall be nominated by the trustees of Western Reserve University upon recommendation by the faculty of the school of medicine. The visiting staff will have absolute authority over the professional treatment of all patients of the hospital. The director of public welfare will be the administrative head of the hospital. The university will have all teaching and research privileges.”

The following motion filed before the Middlesex Superior Court in Massachusetts is the first of the kind ever made in the United States. The text of the motion is as follows:

Commonwealth of Massachusetts.
Middlesex, ss Superior Court, Divorce Division
Florence M. Sanborn vs. Robert C. Sanborn,
Motion for a Blood Test.

Florence M. Sanborn, petitioner for annulment of divorce decree, in above entitled case; moves this court to require Robert C. Sanborn, respondent, to allow a skillful and competent surgeon to secure from said Robert C. Sanborn a microscopical test to show whether said Robert C. Sanborn is afflicted with an incurable venereal disease.

By Florence M. Sanborn.

Mrs. Sanborn asks the test to show that Mr. Sanborn is afflicted with an incurable venereal disease. If a microscopical examination of his blood shows that Mrs. Sanborn contends that he was not justified in obtaining a decree against her for desertion.

The House Fly.

Reliable statistics charge the house fly as the conveying cause of twenty deaths a day in the city of New York the year round. An eminent medical authority has recently stated that the fly as a carrier of the germs of typhoid fever annually costs the people of the United States for sickness, medical expense, and lost time, the vast sum of \$350,000,000. The state agricultural station in Connecticut examined 400 flies. One innocent looking fly carried 6,600,000 germs, and the majority of the 400 were loaded with more than 1,250,000 bacteria each.—Public Health of Michigan.

Fractures About The Elbow Joint.

In a series of cases Basil Hughes states that most of them do well and the results generally satisfactory except in patients with a rheumatic tendency. Massage in these cases with fibrosis and thickening is useless and often aggravates the condition. One or two improved on iodine and arsenic. A complication to be feared and an unavoidable one is the formation of new bone in the substance of the brachialis anticus muscle near its attachment the so-called myositis ossificans traumatica. It occurred in three of Hughes' series. According to this observer there is no treatment that will cure it. If the new bone is removed, it recurs in greater amount than was present originally.—British Medical Journal, Jan. 17, 1914.

MURDER BY DISEASE GERMS.

Some time ago the daily press was considerably aroused over an attempt at blackmail through mailing virulent germs to various wealthy persons, together with pleas for aid and the offer of an antidote or positive cure. Recently in Germany a man named Hopf was arrested on suspicion of having killed his wife by inoculation with disease germs and the internal administration of arsenic. During the trial, information was brought out to the effect that he had probably on former occasions murdered other members of his family in the same way. Before the criminal court in Frankfort he was charged with the murder of his father and his mother, two of his children and his first and second wives, and with the attempted murder of his third wife. All the persons killed had been heavily insured. Arsenic was found in the bodies of the children and the first wife, but the second wife he had cremated. He denied having inoculated his wives, and there was no post-mortem evidence that he had done so; but he stated that he had used such bacteria for experiments on dogs in connection with certain private studies, although he was not a bacteriologist or a medical man. The bacterial cultures were purchased in Vienna, because no German laboratory was willing to supply the cultures which he ordered, using the name of an alleged scientific institution. The jury found him guilty of murder in all the cases except those of his parents. Medical experts declared that the man was not insane. In Germany, says The Journal of the American Medical Association, there is a law forbidding the sale or giving of pathogenic micro-organisms to unauthorized persons; it is reported that the Austrian authorities are about to adopt similar regulations.

THE TRUTH ABOUT "POISONED NEEDLES."

Popular beliefs on scientific subjects apparently run in waves. Many will remember the interest in hypnotism which followed the publication of "Trilby." Svengali with his "hypnotic eye" at once became a real and possible personage in the public imagination. The newspapers were full of stories of girls and women who had suddenly been fixed and paralyzed by the hypnotic gaze of some mysterious stranger with piercing black eyes and who had been compelled by his will to fantastic acts they were powerless to prevent. Fiction writers took up the idea, and stories centering around hypnotic influence became common. It was used as a plea in criminal cases, various culprits alleging that they had been hypnotized and compelled against their will to perform unlawful acts. All this occurred in spite of the fact, frequently stated and known by every scientific man, that the limitations of hypnotism are definite and well recognized, that no person can be hypnotized unknowingly or against his will, and that few persons are so susceptible as to be capable of being compelled to perform acts beyond their own volition and knowledge.

Another popular fiction which later on took the place of hypnotism was that of instantaneous anesthesia. Stories appeared in the newspapers of women who had been accosted by strangers and, under some pretext, had permitted a cloth or a handkerchief to be pressed momentarily over their mouth and nose. Immediate unconsciousness was said to have followed, resulting in a period of insensibility and irresponsibility, varying from a few minutes to hours or even days. Chloroform sprayed into an open window by means of atomizer, anesthetics tied to a rag on the end of a pole and thrown into a bedroom, instant unconsciousness following the administration of drugs unknown to physicians and pharmacists, were some of the variations of this idea. In the minds of physicians and nurses who see every day the administration of anesthetics, such stories

only excite mirth. Any one who knows the difficulty and labor of securing unconsciousness through the use of anesthetics, even under the most favorable conditions and with every possible means or restraining and controlling the patient, knows how absurd such stories are.

A latter-day variation of these popular beliefs, says The Journal of the American Medical Association, may be found in the "poisoned needle" stories which have been going the rounds of the press recently. A woman goes to a moving-picture theatre, enters a crowded elevator, a street-car, or elevated train, or is caught in the press of a crowd. Suddenly she sees, close beside her, our old friend the "mysterious stranger," with the piercing black eyes and the compelling manner. At the same time, she feels a sting and knows that she has been stabbed with a poisoned needle. She immediately becomes unconscious, dazed or irresponsible for a greater or less period of time, during which she experiences a number of marvelous adventures or hair-breadth escapes.

It is not possible to say that no woman was ever without her knowledge given a drug hypodermically which produced unconsciousness. It can, however, be said very positively that there is no drug known to scientific men which could be administered in the manner or which would produce the effect described in recent newspaper reports.

One of the laws of hysteria is that when any peculiar phenomenon is reported, similar instances immediately appear throughout the country. We may now expect a spring crop of magazine stories and popular novels based on the poisoned needle as a motive. Scientifically, the thing is as ridiculous and impossible as hypotism of an unwilling subject or instantaneous anesthesia. Popular beliefs travel in waves, and hysteric and excited imaginations help them along. The history of popular delusions, from Salem witchcraft to present-day vagaries, is full of such instances.

BOOK REVIEWS

The Clinics of John B. Murphy, M. D. at Mercy Hospital, Chicago, Feb. 1914. Published Bi-Monthly by W. B. Saunders Company, Philadelphia and London. Price per year, six numbers, \$8.00.

This number has some special features. During the Clinical Congress of Surgeons, many famous surgeons were present from the leading medical centers of America and also of Europe. Seven of the fourteen clinics treated of bone and joint lesions. The frequent presentations of these subjects from different angles must give the general surgeon who reads these pages with care, clear ideas of the proper treatment of injuries, diseases and accident of industrial life which is so important from every point of view. Dr. Murphy with his usual courtesy and wisdom invited certain visiting surgeons who had something to say that we would like to hear to present some features of their own work. Sir Rickman Godlee addressed the audience on some features of Lord Lister's work in developing modern surgery. Sir Rickman brought forcibly to the minds of the younger surgeons that the undertaking was not an easy one and required the aid of many hands which were slow in changing from old and established methods.

Dr. G. W. Crile briefly emphasized the value of nitrous oxide anesthesia which he has done so much to make valuable in skillful hands.

Dr. Geo. E. Brewer talked briefly of Metastatic Infections. Mr. Paterson of London gave a brief discourse on Carcinoma of the Stomach, giving due credit to American surgeons but taking issue with the Mayo Clinic on the 71 per cent of cancers having their origin in simple ulcers. This appears to be the views of many European surgeons; that the Mayo's place the percentage too high. The immense clinical experience of the

Mayo Clinic and the extreme care taken in working out the problem, makes the argument extremely difficult to meet.

The announcement is made that "Beginning with the April number there will appear in each issue of the Clinics a detailed talk by Dr. Murphy on some special topic connected with the general subject of Surgical Diagnosis." We are sure that this feature will be highly appreciated by the profession.

The following clinic days and hours is announced.

Monday 9-12. For Visiting Doctors and Students.

Wednesday 9-1. For Visiting Doctors.

Friday. 10:30-12:30. For Visiting Doctors and Students.

Saturday 9-1. For Visiting Doctors.

All visiting doctors are welcome at these clinics.

J. J. Nutt: Diseases and Deformities of the Foot. E. B. Treat & Co., 1914, Publishers, New York.

Although the book is recommended modestly as a hand book for general practitioners who lack in time to take up the study of these important subjects it must be stated in justice to the author that the different topics of foot troubles are being treated with a clearness and thoroughness as would do credit to any hand book on orthopedic surgery. Beginning with the treatise on stotic weak and flat foot the author puts two very complete and interesting chapters on the Anatomy and the Physiology of the normal foot ahead of his clinical pathology, which facilitate greatly a thorough understanding of the complicated Pathology of the flat foot. There is also a description of Shaffers so-called non-deforming club foot, filling a much needed want to present this generally disregarded, but nevertheless important, deformity before the eyes of the practitioner. It is gratifying to see the simple methods of treatment as strapping and manipulating and massaging not only mentioned, but also sufficiently explained to be of practical value for the reader. The treatise on club foot is no less exhaustive. Of special interest is also the chapter on Pes cavus and on the spastic paraplegia complicating Potts' disease. Infantile Paralysis is treated with like regards to the conservative and the operative measures. In the discussion of the inflammatory diseases of the foot a table containing data for differential diagnosis will be especially appreciated. Minor ailments of the foot as painful heel, metatarsalgia, hammertoe, ingrown toenail, etc., are given quite sufficient consideration.

ARTHUR STEINDLER, M. D.

The Practice of Pediatrics. . . By Charles Gilmore Kerley, M. D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital. Octavo of 878 pages, 139 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$6.00 net; Half Morocco, \$7.50 net.

Dr. Kerley presents in this volume a most readable and practical and valuable treatise. The arrangement of the contents is a most happy one—rendering ready reference. It greatly increases the value of the work.

In the opening chapter, Dr. Kerley is quite optimistic in relation to maternal nursing of the infant. More out door life and better physical development are paying dividends in better mothers and longer lived babies. It is well this is so, where we recall that in the past almost twenty-five per cent of babies failed to live until the fifth year.

The chapter on modified feeding is clear and comprehensive. If the mother cannot nurse her infant, modified cow's milk is the best substitute and any physician should know how to write a correct formula. It is a

signal fact that the majority of practitioners do not understand this necessary procedure. Dr. Kerley makes this feature plain.

The various illnesses, indispositions, accidents and deformities of infants and children are carefully and concisely considered.

The quoting of numerous illustrative cases is a valuable feature.

All in all, Dr. Kerley's book impresses us most favorably.

Principles of Surgery. By W. A. Bryan, A. M. M. D., Professor of Surgery and Clinical Surgery at Vanderbilt University, Nashville, Tennessee. Octavo of 677 pages with 224 original illustrations. Philadelphia and London. W. B. Saunders Company. 1913. CCloth \$4.00 net.

The book before us is as its title indicates, a work on the principles of surgery. We are impressed with the similarity in plan which a book bearing the same title written many years ago by Dr. Senn which was read with interest and profit by a generation of general surgeons. At that time modern aseptic surgery was in its infancy and many of the earlier readers never understood it well. Today every surgeon who reads books is a critic compared with Dr. Senn's day, hence accuracy of statement may be easily judged. We do not discover anything new nor could we reasonably expect to, considering the immense amount of enterprising work in surgical pathology going on in every important laboratory. The knowledge gathered is presented in this book in a very attractive and concise manner and is well arranged and is presented in such form as to be especially valuable to the student in his medical course and in his hospital year. We would especially recommend it to the student serving as a hospital intern at a time and under environment peculiarly adapted to laying a broad scientific foundation for his future work.

OBITUARIES.

At a meeting of the Cherokee County Medical Society the following resolution was adopted and ordered sent to the State Society Journal for publication:

Resolved:—That by the death of Dr. Royal L. Cleaves the medical profession has lost a faithful and efficient member, and the community a worthy and patriotic citizen.

That we deplore his loss and sympathize with the family in their bereavement.

That his qualities of head and heart had endeared him to the members of the profession of which he was a conspicuous member.

That his loss has left a blank that will be difficult to fill.

That the people among whom he labored so long and faithfully owe him a debt of gratitude for his unselfish and painstaking work, both as a physician and a philanthropist.

That his example is worthy of emulation and that the esteem and affection of his friends and patrons, which he so richly merited, and which to him were dearer than pecuniary reward, should be an incentive to us all to imitate his virtues.

Signed:—

E. HORNIBROOK, Pres.

W. A. HOWARD, Secy.

M. N. VOLDENG, Chairman Com. on Resolutions.

Dr. E. M. Heflin, Calmar, Iowa, a member of the Winneshiek County and Iowa State Medical Societies, died in Grand Island, Nebraska, December 20th, 1913. On February 6th the Winneshiek County Medical Society adopted the following resolutions in regard to his death: The Winneshiek County Medical Society deeply regrets having to record

the death of Dr. E. M. Heflin of Calmar, Iowa, one of its active members, who always took an active interest in the affairs of the society. Therefore be it resolved by the members of the Winneshiek Medical Society: that we sincerely regret the death of Dr. Heflin, and extend our warmest sympathy to the surviving members of his family.

That this resolution of respect be sent to his family and to the Journal of the Iowa State Medical Society, and a copy filed in the records of the Winneshiek County Medical Society.

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| A. F. Barfoot, M. D. | } Committee |
| H. B. Amy, M. D. | |
| H. H. Thomas, M. D. | |

John D. McCleary, M. D., College of Physicians and Surgeons, Keokuk, Iowa, 1867; a Fellow of the American Medical Association; and for some time a member of the Board of Regents of the Iowa State University; for thirty-eight years a member of the Board of Commissioners for Insanity of Warren County, Ia.; and for fifty-two years a practitioner of Indianola, Ia.; assistant surgeon of the Thirty-Fourth and Forty-Sixth Iowa Volunteer Infantry during the Civil War; for forty-one years local surgeon of the Rock Island System; died at his home in Indianola, April 2, aged 84.

Edward Walter Pahl, D. D., Keokuk Medical College, College of Physicians and Surgeons, 1907; a Fellow of the American Medical Association; formerly of Cantril, Iowa; died at his home in Milton, Iowa, March 27, aged 29.

CORRESPONDENCE.

THE PHILOSOPHY OF A DOCTOR.

Responsibility requires capacity but capacity demands opportunity. Virtues eminently essential in certain situations prove striking, the reverse in others. Piety and confidence in men lost Charles the First his head, and the nation it's tranquility. Consummate hypocrisy and fanatical bigotry preserved to Cromwell his authority, and the state it's security. Magnanimity and candor though commendable in private life lend little to diplomacy and hardly an ingredient of character is recalled that might not at times militate against legitimate purpose.

More lies beyond microscope and telescope than is discerned and infinitely out side our vision operate immutable laws which actuate motive and direct destiny, which fact commends us to the guidance of those which enrich and perpetuate the years. Life is nothing unless lived, and living consists not in food and in raiment, but in that inexpressible felicity and exaltation of soul which springs from an intimate association with the tranquilizing and uplifting forces of human thought and endeavor. The ardor of life soon wanes for him whose vision extends not beyond his own canopy. Lack of fellow feeling distinguishing the scavenger who forages upon human frailties, depauperizes existence and dissipates every worthy possibility.

The strands of time are strewn with those who never learned to sacrifice, seduced by the terror of the senses they parried every affection and spurned every attachment until in the evening of life their exhausted and insane spirits sank into oblivion unhallowed and unsung. Love of self flourishes upon it's own vitals. It consumes virtue and fathers vice and masquerading against its self imposes its most malignant manifestations, believing them equitable and just.

Folly respects the reality for the shadow and embraces the immediate and transitory rather than by rising above personal considerations and dedicating even the minutiae of life to the welfare of humanity securing that which is truly remunerative and enduring. Anything less, though concerted with great abilities, fails of life's full fruition.

Mind is man and life the result of its functioning. If normal, living will be sweet and productive, but if otherwise, disquieting and barren. Much depends upon ancestry. Mind receives its individuality and life its general tenor from hereditary instincts influenced by environment. Superiority of the former in formation of character is proportional to its intensity. Environment because pertinent to the hour appeals strongly to the consciousness and in the presence of feeble instincts is likely to dominate in the formation of individualities. On the other hand forceful instincts will control development and shape destiny.

Whatsoever enters mind becomes in some degree a part of it and even passes to posterity. For as rivulets swell to rivers then to seas, so are the faintest ideations wont to gather impulse, and formulate principles and practices for the benefit or injury of succeeding generations. This extraneous source and great variety of characteristics assembled in one individual explains the almost incomprehensible diversity in personalities and the consequent lack of uniformity in opinions, since the element of self prejudices many conclusions, even in the face of reason and justice.

Mind is a mosaic of visions; the soul a seething caldron of antagonistic impulses. The virtues warring against the passions. Love against hate; purity against lust; honor against dishonor; constancy against inconstancy; the ennobling against the sordid; generosity against prejudice; mercy against tyranny—all struggling for domination, but howsoever assembled they constitute the individual and determine his destiny.

But man is a drifter, following lines of least resistance. Unfamiliarity with the sources and significance of his own impulses and consequent inability to choose discreetly those which he shall inculcate, causes him to display an instability and contrariety of purpose inconsistent with a fine honor and a magnanimous spirit. Realization of this shatters confidence in self and faith in mankind, and induces surrender to the superficial and temporary and illusive allurements of the passions rather than fidelity to the solid and enlightening dictates of reason. His life is therefore a constant contradiction and disappointment. Purposes and attainments at variance with inclinations and interests, and thus is usefulness curtailed and satisfaction aborted. Recourse lies in obedience to moral intellectual and physical laws which though imperfectly understood, are infallible.

The dial which marks unerringly the complexion and direction of men's minds and supplies the index to their characters is the record of their public opinion.

Discreet sentiment may be superficial, capricious and unreliable, and therefore immaterial, but concrete judgment because free from personal bias and based upon discernment of animus and motive, is vital.

Principle is the ingredient which substantiates and differentiates individuals. It is the lodestone and the compass and must be wholly possessed or entirely absent. That which accepts the slightest unfair advantage differs in nowise from that which dispoils the pocket or robs a life, except in lack of opportunity, for it is not the enormity of the consequences but the spirit and purpose of the act which determines its character. Sense of honor is man's crowning glory, and yet how often surrendered for fleeting advantage, the birth right for the pottage. To have been well born surpasses all other fortune and constitutes the first

requisite for a physician. To have inherited a personality endowed with eminent virtues is as far above computation as to pass one on to posterity destitute of adornments is beneath criticism.

The contest is between individuals. The meeting of life's obligations and impositions compose its curriculum and are necessary adjuncts to the building and embellishment of character and must therefore be accepted with equanimity and born with fortitude and not pusillanimously avoided or either contemptuously ignored. Nor can they with impunity be escaped since as every strand is vital to the woof so is every virtue to the fullness of character and every life to completeness of the social fabric and the wholesomeness of the body politic.

Destinies hinge upon personal contact. It constitutes the touch-down of life and whether engaged with stupendous enterprises or just the humbler struggles for existence is immaterial. For here in either case the alloy is decomposed in the crucible of passion and the heart is bared to judgment. Here vice exposes its nudeness and virtue shines forth her glory. Incidents apparently barren of potential possibilities are often pregnant with the direct consequences, and so it behooves all to weigh each mental impulse before launching it upon the limitless expanse of speculation.

Personality is undetachable from responsibility. Each individual exacts servitude and begets obligations in excess of those he requites, and is therefore a constant debtor to society. Each reflects some light, though through prison wall, and each casts some shadows though garbed in royal array. The loftier the plain of understanding and the broader the field of activity the more comprehensive and crucial the influence, and the more pressing the obligations. To the latter class belong the physicians, and these observations are most pertinent to medical men. To them no worthy attribute should be missing, but more physicians are born than made, and more practitioners are made than there are physicians born. The duties and responsibilities of medical men begin in their ancestry. They involve every fibre of their being and every department of their nature. Having to deal with every attitude of life and of death, their nearness and invited interest to all most sacred to their clientele admits them into the inmost precincts of their hearts, a position in which credit can be done by only the strongest and the most noble of men.

PERCY R. WOOD, M. D.

SOCIETY NOTES

Des Moines Pathological Society.

The society was favored at its last meeting, April 17, 1914, by an address from Dr. John Auer of the Rockefeller Institute for Medical Research, New York City, on the subject of anaphylaxis, given under the title of The Functional Disturbances of Various Organs caused by Serum Hypersensitiveness.

This able and pleasing address held the closest attention by the interesting presentation of the subject, and gave evidence of the thorough manner in which the problems of medical research are investigated by the institute represented by the essayist.

It became further evident that a familiarization with the subject will require quite an addition of new terms to our nomenclature. Although the phenomena of anaphylaxis are in themselves among the most striking in the realm of biology, their actual importance is derived chiefly from their bearing on two subjects of great practical interest. On the one hand, anaphylaxis is destined to play considerable role in the development of the entire subject of immunity, and this gives its data a great theoretical

interest; it is becoming further apparent that an understanding of anaphylaxis is essential to the interpretation of many of the phenomena of human disease. Not only is there good reason for believing that certain diseases, for example, asthma, are directly traceable to hypersensitization of the individual, but the problems of diagnosis and of therapeutics are intimately bound up with the methods of anaphylactic investigation.

The state of anaphylaxis or over-sensitiveness is opposite to that immunity. It is impossible to understand the immune diagnostic reactions, as for example, the reactions to tuberculin, without an appeal to the data of anaphylaxis.

Again, in therapeutics, the numerous instances of drug sensitization, but, above all, of serum disease, and of serum death, make an understanding of the underlying principles of anaphylaxis incumbent upon every physician.

In connection with the recent activity in the investigation of this subject, the essayist referred with pride to the fruitful results of American workers, mentioning the work of Theobald Smith, Rosenau and Anderson, Gay and Southard, Wells and White, Lewis (with Auer), and Vaughan; and in this connection it should be stated that the name of the essayist is intimately associated with the best work on the subject.

In discussing the experimental production of anaphylaxis some interesting facts were referred to. A remarkably minute dose of a foreign proteid is effectual in producing the anaphylactic state, as 0.001 c. c. of of horse serum of 0.000001 grams of purified egg albumin is sufficient to render an animal hypersensitive. After an animal has been sensitized, it requires a much larger dose to produce the anaphylactic death, but this again is much below the usual toxic dose of the particular protein for the animal concerned.

By transferring the serum of a sensitized animal to another of the same species, the state of hypersensitiveness can be transmitted.

The sensitized state can also be inherited.

Anaphylactic shock and death produced different effects in different animals. In the guinea pig the lungs are mobilized so that the air spaces are distended to the extreme limit; in the rabbit it affects mainly the heart muscle and produces a form of heart block, while in the dog, a vasomotor paresis affecting principally the gastro-intestinal tract is the principal disturbance, yet there seems little doubt that the underlying process is the same throughout.

The nature of the phenomenon or reaction has not as yet been well explained.

Vaughan proposed that in the union of the sensitizing proteid and resulting anti-body results in the production of toxic proteoses and he is followed by most of the German investigators.

Another interesting feature is the problem of desensitization which has been worked out in the lower animal by Besredka and French observers Grysez and Dupuich.

It is hoped that the anaphylactic perils which are at present associated with the use of therapeutic sera will eventually be removed by methods devised through laboratory research.

The essayist emphasized the rare occurrence of anaphylactic shock in the human person, and while not underestimating its perils, it is not comparable with the dangers incident to the disease for which the therapeutic sera are applied.

The complete paper of Dr. Auer will be published in an early number of the Journal.

Among the visitors present at this meeting were: Dr. A. B. Deering

and Dr. N. M. Whitehill of Boone; Dr. Ben Everall, Waterloo; Dr. L. G. Patty, Carroll; Dr. G. W. Franklin, Jefferson; Dr. J. W. Finarty, Knoxville; Dr. F. L. Smith and Dr. J. L. Taylor, Monroe; Dr. C. D. Busby, Brooklyn; Dr. O. F. Parish, E. E. Harris, and Dr. E. S. Evans, Grinnell; Dr. A. D. Woods, State Center; Dr. J. L. Saunders and Dr. Evans, Ft. Dodge; Dr. G. Gibson, Lehigh; Dr. S. A. Hinshaw, Newton; and Dr. C. W. Cornell, Knoxville.

This closes the series of papers by invited guests for this year. These have included the following:

Oct. 23, 1913. Dr. A. E. Hertzler, Kansas City, Mo., "Histogenesis of Sarcoma."

Dec. 12, 1913. Dr. Ludwig Hektoen, Chicago, Ill. "The Causes of Crises in Pneumonia."

Mar. 21, 1914. Dr. Joseph C. Bloodgood, Baltimore, Md. "The Difficulties in the Diagnosis of the Early Stages of Carcinoma and Sarcoma."

April 17, 1914. Dr. John Auer, New York City. "The Functional Disturbances of Various Organs Caused by Serum Hypersensitiveness."

An early announcement will be made of the program of the year beginning in September.

Walter L. Bierring.

Preliminary Program American Proctologic Society. Sixteenth annual meeting, Atlantic City, N. J., June 22 and 23, 1914. Headquarters and place of meeting, Hotel Chalfonte. The profession is cordially invited to attend all meetings.

Officers: President, Jos. M. Mathews, M. D., Louisville, Ky.; Vice-President, Jas. A. MacMillan, M. D., Detroit, Mich.; Secretary-Treasurer, Alfred J. Zobel, M. D., San Francisco, Cal.; Executive Council, Louis J. Hirschman, M. D., Chairman, Detroit, Mich.; William M. Beach, M. D., Pittsburgh, Pa.; J. Rawson Pennington, M. D., Chicago, Ill.; Alfred J. Zobel, M. D., San Francisco, Cal.

PAPERS

- 1—A Review of Proctologic Literature for 1913..... Samuel T. Earle, Baltimore, Md.
- 2—Abnormalities of the Colon, as Seen With the Roentgen Ray:
Lantern Slide Demonstration, Walter Irwin LeFevre, Cleveland, Ohio.
- 3—Coccygodynia: A New Method of Treatment by Injections of Alcohol Frank C. Yeomans, New York City, N. Y.
- 4—The Technique of the Perineal Operation for Cancer of the Rectum..... Jas. A. MacMillan, Detroit, Mich.
- 5—Myasthenia Gastro-Intestinalis... V. Lee Fitzgerald, Providence, R. I.
- 6—Further Observation on the Treatment of Pruritis Ani by Auto-genous Vaccines Dwight H. Murray, Syracuse, N. Y.
- 7—A Report of Cases of Pruritus Ani Treated with Carnotite....
..... Saml. T. Earle, Baltimore, Md.
- 8—Treatment of Amoebic Dysentery with Emetin Hydrochloride..
..... Alfred J. Zobel, San Francisco, Cal.
- 9—Amoebic Dysentery and Its Treatment.....
..... William M. Beach, Pittsburgh, Pa.
- 10—Some Consideration of Colonic Surgery.....
..... Louis J. Hirschman, Detroit, Mich.
- 11—Myxorrhoea Coli Membranacea and Colica.....
..... Saml. G. Gant, New York City, N. Y.
- 12—Hemorrhagic Colitis; with Report of Three Cases.....
..... Jerome M. Lynch, New York City, N. Y.
- 13—Retro-Rectal Gumma; Report of Two Cases.....
..... Alois B. Graham, Indianapolis, Ind.

- 14—Anal and Rectal Growths of Benign or Doubtful Character.
 T. Chittenden Hill, Boston, Mass.
 15—Retro-Rectal Infections. Collier F. Martin, Philadelphia, Pa.
 16—Radium, Its Use in Proctology. . . . J. Rawson Pennington, Chicago, Ill.
 17—Rectal Adenomata. Granville S. Hanes, Louisville, Ky.
 18—Hyperplastic Tuberculosis of the Colon.
 J. M. Frankenburger, Kansas City, Mo.
 19—Pseudo Intestinal Stasis and Real Intestinal Stasis Demonstrated
 Roentgenologically Arthur F. Holding, New York City, N. Y.
 20—Local Treatment of Anal Fissure. . . . Jas. A. Duncan, Toledo, Ohio.
 21—Reflex Symptoms Arising in the Rectum and Anus.
 George B. Evans, Dayton, Ohio.
 22—Some Unusual Results of Sigmoidoscopy.
 Ralph W. Jackson, Fall River, Mass.
 23—Crude and Careless Diagnostic Methods: Results of, in Reported
 Cases of Recto-Colonic Conditions. . . . John L. Jelks, Memphis, Tenn.

The American Society for Physicians' Study Travels.

President: Dr. James M. Anders, Philadelphia, Pa., Dr. William J. Mayo, Rochester, Minn., Dr. Lewellys F. Barker, Baltimore Md., Dr. Rudolph Matas, New Orleans, La. Secretary General: Dr. Albert Bernheim, Philadelphia, Pa.

Department Directors: Finances, Dr. L. Webster Fox, Publicity, Dr. Alfred Stengel, Postgraduate Work, Dr. Ludwig Kast, New York, Travel Manager, Dr. E. E. Montgomery.

To the Members of the American Society for Physicians' Study Travels and to all those interested in our First Annual Study Travel Tour of June 26th to July 16th, 1914:

We take pleasure in sending you the Prospectus First Annual Tour, a program for Special Postgraduate Work as arranged by the local Committees of the places the Society will visit. From the program you will readily anticipate what a delightful trip you will have before you. The distance which you will transverse is 1654 miles by rail and 416 miles by water, total of 2070 miles. Whether you live east, west, north or south, of Atlantic City, the ticket you buy for the Atlantic City Meeting will readily fit into the ticket for the First Annual Study Travel Tour. Write about information. You must remember, that we will have to restrict the number of the participants in our trip, therefore, send in your name for enrollment at once. Cost of Trip for each participant, \$180.00.

The Committee.

Friday—9:00 P. M.—The members invited to a reception by the Medical Club of Philadelphia at the Bellevue-Stratford. The ladies will be the guests of the B. F. Keith Company at Keith's Theatre, Chestnut and Twelfth Streets.

Saturday—8:15 A. M.—Leave Bellevue-Stratford Hotel. Short walk east on Walnut Street to buildings of the Jefferson Medical College, northwest corner Tenth and Walnut Streets; arrive 8:30 A. M.

Dr. Joseph McFarland, "Demonstration of Pathologic and Parasitic Specimens."

Dr. T. H. Weisenburg, "Nervous Diseases" illustrated by moving pictures.

Clinics by Drs. W. L. Rodman, Ernest Laplace, W. Easterly Ashton, L. Webster Fox and George M. Boyd.

Luncheon at Houston Hall as the guests of the Trustees of the University of Pennsylvania.

Clinics by Drs. John G. Clark, Gynecology; C. H. Frazier, Surgery;

Alfred Stengel, Medicine; William G. Spiller, Neurology, at the Philadelphia General Hospital, 34th and Pine Streets.

Willow Grove—Dinner. Special program will be provided for the ladies of the party.

Sunday, June 28th—Afternoon—Through courtesy of James Robinson, Superintendent of Police, a boat trip on the Delaware River to League Island Navy Yard, for inspection, and return.

White Haven.—Monday, June 29th—Arrival, 12:05 P. M. Luncheon at the Sanatorium. Address by Dr. Lawrence F. Flick, "The Sanatorium Treatment of Tuberculosis." Inspection of the buildings.

Buffalo.—Tuesday, June 30th, to Wednesday, July 1st—Trip to or boat through the harbor and Buffalo Creek, to see elevators, etc. Automobile trip through some of the parks, stopping at Historic Society Building, where there are Indian relics and other historic material. Trip across the Niagara River to old Fort Erie (War of 1812 and French and Indian war), including observations of prehistoric Indian villages. On the way to the Falls some historic sights of interest; chimney of Ft. Schlosser, dating before French and Indian war.

Niagara Falls.—Wednesday, July 1st, to Thursday, July 2d—Visit of the Falls at moonlight; visit to islands. Hon. Peter A. Porter, speaker. Dr. Benedict will be glad to accompany to Lewiston.

Toronto—Thursday, July 2d, and Friday, July 3d—Visit to medical-scientific institutions and hospitals. Saturday, July 4th—Alexandria Bay, Thousand Islands.

Montreal.—Sunday, July 5th, and Monday, July 6th—Visit to medical-scientific institutions and hospitals.

Quebec—Tuesday, July 7th, and Wednesday, July 8th—Visit to medical scientific institutions and hospitals. Wednesday, July 8th, and Thursday, July 9th—Fabyans, White Mountains. Addresses and scientific lectures by members.

Portland.—Thursday, July 9th to 10th. Friday, July 10th—Sail around Portland Harbor; visit to the Maine General Hospital and Children's Hospital; visit to Longfellow's birthplace; Eastern and Western promenades. Luncheon.

Boston.—Saturday, July 11th—Dr. Horace W. Arnold, Dean of Graduate School of Medicine, Harvard University, will arrange a program.

Saranac Lake.—Sunday, July 12th—arrival, 12:30 P. M. 2:00 P. M.—Choice of trips on river or lake, or by automobile to Lake Placid or Saranac Inn. Inspection of Adirondack Cottage Sanatorium, Raybrook (State Sanatorium), Saranac Lake Laboratory, Reception Hospital. 8:00 P. M.—Short addresses on the experimental study of immunity on tuberculosis, various phases on the diagnosis and treatment of pulmonary diagnosis, by Drs. Baldwin, Krause, Kingston, Brown, and others.

Saratoga Springs.—Monday, July 13th—6:40 A. M.—Arrival in Saratoga Springs. Committee of the Saratoga Springs Medical Society meets the visitors at the railroad station. Transfer to United States Hotel. Breakfast.

New York.—Wednesday and Thursday, July 15th and 16th—Visit to hospitals and clinics. Research substitutes will be arranged.

The program as given in the Prospectus, in regard to general sight-seeing tours, will be additional.

Fort Madison Medical Society met Friday, May 1, 1914, at Anthus House, Fort Madison, Iowa.

Banquet at the Anthus House at 6, P. M.

Program.

- "Address of Welcome",Dr. R. S. Reimers, Fort Madison
 "Response to Welcome",Dr. F. M. Fuller, Keokuk, Iowa
 "Enterostomy for Ileus following Suppurative Appendicitis",.....
 Dr. John D. Freeman, Topeka, Kansas
 Discussion opened by Dr. M. L. Bischoff, Fort Madison, Iowa.
 "Some Points in the Surgery of the Bile Tract",
 Dr. Clifford U. Collins, Peoria, Illinois
 Discussion opened by Dr. H. F. Steinle, Burlington, Iowa.
 "The X-Ray Diagnosis of the Lesion of the Right Upper Quadrant",
 Dr. James T. Case, Chicago, Illinois
 Discussion opened by Dr. James F. Herrick, Ottumwa, Iowa.
 "A Discussion of the Newer Diagnostic Methods in Upper Abdominal
 Affections",Dr. Roger T. Vaughan, Chicago, Illinois
 Discussion opened by Dr. Jas. F. Percy, Galesburg, Illinois.

Officers.

Dr. W. H. Grimwood, President; Dr. E. D. Price, vice-president; Dr. W. H. Newlon, Sec'y. and Treas. Committee on arrangements, entertainment and reception consists of the entire membership of the Fort Madison Medical Society as follows: I. W. Traverse, A. F. Philpott, E. D. Price, W. C. Kasten, F. C. Roberts, J. R. Walker, W. H. Newlon, V. E. Doering, J. W. Philpott, W. H. Grimwood, J. M. Casey, R. S. Reimers. Headquarters at Anthus House.

RESOLUTION INTRODUCED AND PASSED AT MEETING OF THE CHICAGO MEDICAL SOCIETY, APRIL, 1914.

Whereas House Bill No. 6282 otherwise known as the Harrison Anti-narcotic Bill has passed the House and is in the Senate at Washington.

Whereas said bill as passed by the House was satisfactory to the profession.

Whereas an amendment has been offered by Senator Knute Nelson of Minnesota practically prohibiting physicians, dentists and veterinarians from dispensing or distributing narcotic drugs to patients by substituting the word administration for the words dispensing and distributing in said Bill, and

Whereas such amendment would prevent physicians from sending by messenger or otherwise, remedies for immediate relief when unable personally to attend a patient on the instant, and

Whereas such restrictions upon the efficiency of physicians tends to limit their usefulness to the people.

Whereas the amendment in question is evidently offered purely in the interest of dispensing druggists to the detriment of good medical service to the people.

Whereas the record keeping feature also suggested by Senator Nelson is unnecessary and therefore a needless burden to the profession.

Therefore be it resolved by the Chicago Medical Society that the Nelson amendment should be defeated in the interest of public welfare.

Resolved that a copy of these resolutions be published in the Chicago Medical Society Bulletin and that a copy be sent to each United States Senator and the members of Congress from Illinois.

J. V. FOWLER, Chairman,

E. N. WEBSTER,

C. J. WHALEN,

Public Relations Committee.

Dr. Alice M. Clark, of McGregor, has been appointed surgeon for the Chicago, Milwaukee & St. Paul Ry.

The last regular meeting of the Appanoose County Medical Society was held on Wednesday evening, April 29th, at the society's headquarters in the library building, Centerville.

The topic for the evening was "Chronic Nephritis." The subject was presented by Dr. C. P. Tillmont. The doctor presented cases of the disease.

Dr. Davis, of Exline, Iowa, reported a case of bichloride poisoning. The case was a remarkably interesting one and was closely observed by the doctor.

The wish of the program committee is to make the year an eminently practical one, and increase the interest of the meetings by the presentation of clinical cases. The presentation of any interesting cases, even outside the evening's topic, will be appreciated by the members of the society.

Marion County: The President and secretary of this County Society send the following letter under date of March 14, 1914. Read it, it is worth while.

Dear Doctor: The scheduled meetings of the Marion County Medical Society for 1914 are as follows: Thursday, April 11 at Bussey; Thursday, June 11, Thursday, September 10 and Thursday, December 1, at Knoxville. According to the By-Laws; "Sec. 2, Chap. 11." the December or annual meeting must be held at Knoxville; the other meetings may be held any place in the county, the place being selected by a majority of the members present at the previous meeting. The committee on program "Pres., V. Pres. and Sec." asks you to make suggestions as to subjects for papers and discussions. Please attend to this at once. You will find an addressed postal on which to make your suggestions. The secretary is mailing you, under separate cover, copies of the Constitution and By-Laws of the Marion County Medical Society. If you have not paid your 1914 dues, you should attend to it at once, as you will become delinquent April 1. If you are not a member you should become one. The Medical Defense of the State Society is doing splendid work for the members. It is impossible for one to predict how soon the assistance of the Defense might be needed and appreciated.

Mahaska, Monroe and Marion Medical Societies held three joint meetings in 1913; at Knoxville, Albia and Oskaloosa. There will be three joint meetings in 1914. At Knoxville in the last half of May, at Albia the first half of September, and at Oskaloosa the first half of November. Members of the county societies are members of this Tri-County organization. There are no dues. The meetings have been very enjoyable and the papers and discussions quite interesting. The social parts are very pleasant.

We have twenty-seven active members in our society, and there are, in this county forty physicians eligible to membership. There is everything to gain in joining your county society and nothing to loose. Meet with your competitor you will no doubt find he is a pretty good fellow after all.

J. M. Weiss, Pres.
C. W. Cornell, Sec.

Woodbury County Society has lately been serving a dinner on the regular meeting night. The dinner being at 6:30 with the meeting immediately following. On March 12th the dinner was at "The West" with a paper by Dr. A. J. McLaughlin on "Some Facts about Syphilis." The meeting of March 26th, 1914, was held at The Martin Hotel and the program was "Suspension of the Uterus" by Dr. S. E. Sibley, and "Complications following Labor" by Dr. J. A. St. Onge.

On May 31, 1914, the **Polk County Society** had this program:
Market Milk....O. P. Thompson, M. D., State Dairy Inspector, Waterloo
The Atypical Child.....Mary Neff, M. D., Des Moines

Dr Thompson illustrated his talk with a very interesting set of lantern slides. The doctor has a vast fund of information of especial value to physicians and the Secretary of the Iowa State Medical Society would be glad if his talk on Market Milk might be given to many medical Societies in the state during the next year. Dr. Neff discussed the Atypical Child in a very able and exhaustive manner, and brought out many facts of great interest concerning this class of children.

Central District Medical Association of Iowa and Illinois met in Rock Island, Ill., April 9th, 1914, 7:30 p. m.

- 1. Clinical Cases.
- 2. Vulvo-vaginitis during Pregnancy.....J. D. Cantwell, Davenport
- 3. The Pre-Cancerous Condition....Wm. C. MacCarty, Rochester, Minn.
- 4. Otitis Media.....G. F. Harkness, Davenport
- 5. Intussusception in Infancy.....E. M. Sala, Rock Island
- 6. Buffet Lunch.

Muscatine County Medical Society held a meeting at the Golf and Country Club on April 23rd. A banquet was served, after which Dr. Lewis Wine Bremerman, of Chicago, gave a very interesting lecture and lantern slide demonstration on "Genito Urinary Diagnosis of Interest to the General Practitioner." The following members were present: F. L. Appel, T. F. Beveridge, B. E. Eversmeyer, E. H. King, G. A. Heidel, F. H. Little, E. K. Tyler, F. E. Schmidt, A. J. Weaver, H. M. Dean, W. H. Johnson, all of Muscatine; L. W. Bremerman, Chicago.

The program of the **Appanoose County Medical Society** for the regular meeting on April 28th, was as follows:
"Chronic Nephritis with presentation of cases" by.....
..... Dr. C. P. Tillmont, Centerville
"Bichloride Poisoning with a report of a case".....
.....Dr. C. M. Davis, Exline

The **Dallas-Guthrie County Medical Society** had for its program on April 16th:
HysteriaDr. W. A. Seidler, Jamaica
Puerperal Mania, Dr. B. H. Sherman, Dexter
A Note on the Katatonic Syndrome of Dementia Praecox, with a
report of two cases,..... Dr. Wm. Shelton Osborn, Des Moines

The **Lynn County Medical Society** at its regular meeting held April 15th, elected the following officers for this year: President, L. L. Corcoran; Vice Pres., Z. T. Hotsclaw; Sec'y-Treas., J. M. Crowley; Delegate, F. J. Smith; Alternate, F. E. Chalmers.

Dr. E. W. Bauslough was admitted to membership and Dr. F. E. Chambers was re-elected.

Program **Polk County Medical Society**, April 28th, 1914:
Necrosis and Caries of the Maxillary Bones,.....Dr. C. W. Harned
Hydrotherapy, Dr. H. A. Habenicht

This meeting was held in the city library and was followed by a buffet luncheon.

An important meeting of the **Ringold County Medical Society** was held at Mt. Ayr on Wednesday, April 29. Among some prominent questions that came before the society was the "Defense Fund Department of the State Society and the question of County Hospitals." The main feature however was the presence of Dr. J. W. Cokenower of Des Moines, who gave the society a very valuable and up-to-date paper on Fractures.

American Proctological Society.
(Continued.)

The Ano-Rectal Line—Its Clinical Significance.

By Collier F. Martin, M. D., of Philadelphia, Pa.

After discussing the development of the anus and rectum, Martin states that the ano rectal line, or dentate border, has a very important clinical significance, in that it is the point at which both the blood supply and the nerve supply become differentiated. Above it the blood is carried by the portal circulation to the liver; while below it, the blood stream mingles with the general circulation by way of the inferior vena cava. Above it, the rectum is supplied only with visceral or sympathetic nerve fibres, while below it, the anus and its surrounding structures are supplied with spinal nerves, and by sympathetic filaments. These spinal nerves carry sensory impulses common to nerves having specialized cutaneous nerve-endings.

Below the ano rectal line, as evidence of irritation of the spinal enervation, sensory disturbances are expressed in terms of pain, itching, formication, and in alterations in spinal sense of touch, and temperature, with their modifications such as dryness and moisture. Stimuli producing these sensory disturbances show their presence by exciting motor contraction, or by inducing alterations in secretion.

Above the ano rectal line all of the specialized sensations are absent, only the visceral sensations being present. In the rectum it is only pressure and muscle sense that appeal to our consciousness. This sensation is translated in the brain into a desire for stool, which desire is inhibited or assisted voluntarily, as occasion may require.

Excessive spasm of the involuntary muscles supplied by visceral nerves produces an unpleasant sensation, which differs from pain of spinal origin in that it is difficult to localize, and may be described as an ache, which is difficult to bear and exhausting to the patient.

Lesions of the crypts of Morgagni, since they involve both visceral nerve supply of the rectum and the spinal enervation of the anus, are associated with many disturbances of the reflexes.

Infection, and malignant process, occurring above the dentate border, tends to spread upwards, by the way of the deep lymphatics, to the pelvic or uro-genital organs, or to the liver, via the portal system. Below the ano rectal line superficial abscesses result from infections of the proctodeum and the rectal crypts. Malignancy here is associated frequently with extension to the inguinal glands.

In general, there is a marked tendency for pathologic processes to limit their invasion to the embryonic structure in which they began; the ano rectal line being the "great divide" between the ectodermic structures. Rectal infection, and malignancy, rarely extend below the dentate border, while anal pathology usually remains below this line and the levator ani muscles.

Ano rectal symptomatology is equally differentiated. The subjective symptoms of a pathologic process bear little relationship to the lesion, per se, but depend upon the interference with the functions of the spinal or sympathetic nerve supply of the tissues involved, whether this interference be mechanical, inflammatory, or functional.

Further Observations on Pruritus Ani; Its Probable Etiologic Factor; Results of Treatment.

By Dwight H. Murphy, M. D., of Syracuse, N. Y.

Dr. Murray's paper, which is a continuation of his investigations on

the etiology of pruritus ani, gave some new points which he had observed during the past year, and his additional experience in the treatment of patients. He found no reason for materially modifying his former reports, but has gathered data which helped to prove the correctness of his previous work. He found streptococci infection in three cases of pruritus ani and vulvae, and in four cases of pruritus that have had involved the scrotum as well as the anus. These complicated cases improved, with the exception of two vulva cases, by the use of the vaccine treatment.

During the past year Dr. Murray has increased his former series of thirty-two cases, by twenty-five additional cases, in five of which streptococcic infection was not found. These cases showed other infections, which still further proves the cocigenous nature of pruritus ani; and also demonstrates that other bacteria than streptococci may bear a causal relationship, as was hinted in his first paper on this subject.

His cases, so far as he has been able to determine, have not been affected by diet. Since Dr. Murray discovered the infection in pruritus ani he has never interfered with the food of any patient; neither has he restricted them in the smoking or drinking habits. The improvement under the vaccine treatment, without regard to eating, drinking, or smoking, gives him additional proof for the bacterial theory.

During the past year he has carefully investigated as to whether or not the itching extends into the anal canal beyond Hilton's white line, with the result that only in one instance did it extend beyond that point, and then only for a short distance.

His investigation of the past year have given him additional proof that pruritus ani is not caused by any local lesion within the anal canal, and that when such lesions exist with pruritus ani they are coincidental.

In the cases that have been operated for local lesions the pruritus ani has not been permanently improved as a result of the operative procedure.

He said that rectal and general surgeons have observed many cases of fistulae with discharge upon the anal skin, without pruritus ani being present. The same is true of hemorrhoids, constipation, and other rectal lesions, pruritus ani occurring in only small proportion of such cases. He, therefore, still holds that when pruritus ani exists in connection with other lesions that it is a coincidence. In his 1912 report he gave a summary of nine hundred consecutive rectal cases wherein this fact was established fairly well.

He referred to the opsonic index, or more properly the coefficient of extinction of opsonins, and claimed that much valuable information was to be gained by this test.

His work shows that if a complicating infection exists, and other bacteria than streptococci are found to be the sole invading organisms, we must use the corresponding autogenous vaccine. The opsonic index, following a bacterial diagnosis, is the proper method for determining this.

The results of treatment, and the history of patients, prove to him, that if pruritus ani exists with local lesions which demand operation, that the prognosis depends upon whether a skin infection is present or not. If the skin infection is present the local lesions may be cured by the operation, but the patient should not be led to believe that the pruritus ani will also be cured by it. Per contra, if a skin infection does not exist with a local lesion and itching, the prognosis may be that the itching will very likely cease with the cure of the local lesion.

After personal investigation in treating; watching results; noting how cause, effect, and results, dovetail together; comparing these investigations with statements and theories made in text books, and in articles

appearing from time to time in medical journals, and containing no definite pathology or scientific reasons for cause and effect; Murray cannot understand how the profession will uphold such theories, rather than the bacterial theory which has been so well proven in his own cases and confirmed by other observers.

The uniformity of the bacteriologic findings is a strong support for the bacterial theory of the etiology of pruritus ani. The chronicity of all the cases; the uniform symptoms; the similar conditions of the skin; the locality; the regularity as to the time of attacks; the uniformity of itching outside of Hilton's white line; the uniform blood findings as to the coefficient of extinction of opsonins; and the fact that all local applications which have given beneficial results in the past have contained a strong germicide; all point directly to a common cause. Further confirmation is found in the uniformly good results of treatment with autogenous vaccine of the variety of bacteria against which the patient has a low phagocytic power; and in the lack of good results by the various haphazard methods of treatment in general vogue.

His reference to fissures in previous papers having been misunderstood by some, he desired to state that he had referred only to fissure-like cracks of the skin, and not to anal fissures or ulcers.

Endo's medium is used to plate the cultures. The vaccine is of the strength of one billion to the cc., beginning with two minims, or one hundred and thirty millions.

Dr. Murray refers to a paper written by Dr. Jerome Wagner, of New York City, published in the May number of the Medical Review of Reviews, in which Dr. Wagner reports some erroneous ideas claimed to have been gleaned from reading Murray's first two reports. Dr. Wagner not having been able to confirm these reports, Dr. Murray pointed out the errors of technic in Dr. Wagner's work, as well as his errors in the interpretation of the reports.

Dr. Murray gave statistics, in favor of his theory, drawn from three years original work on the subject; he also gave a summary of the results of treatment, showing the favorable clinical results with autogenous vaccines in a large majority of the cases treated.

He summed up his conclusions, as follows:

1st. Results of the past year's work continue to uphold the correctness of the bacterial theory of pruritus ani.

2nd. It is advisable to make a bacteriologic examination of all cases of pruritus vulvae; also of case of scrotal pruritus.

3rd. The coefficient of extinction of opsonins is a valuable aid in diagnosis in complicated and obstinate cases.

4th. Pruritus ani in this series of cases rarely extends above the white line of Hilton, and it is still subjudice.

5th. The presence of a skin infection with a local lesion begets an unfavorable prognosis for the cure of pruritus ani by an operative procedure.

6th. The absence of a demonstrable skin infection and the presence of a local lesion, with pruritus ani, will justify us in making a favorable prognosis for the cure of the pruritus ani by an operative procedure.

7th. Pruritus ani, with such infection as we have demonstrated, and a lesion existing in the anus or rectum, according to his statistics, is a coincidence; and the latter lesion is not the cause of the pruritus ani.

8th. The sphincter muscle does not allow a leakage of rectal mucus upon the anal if one has pruritus ani, except there is a patulous anus, any more than it does in a normal individual who has no pruritus ani. The moisture of the parts is due to a low grade inflammation of the infected anal skin.

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THE CHICAGO, MILWAUKEE & ST. PAUL RAILWAY HAS BEEN SELECTED THE OFFICIAL ROUTE FROM DES MOINES TO SIOUX CITY FOR THE SIXTY-THIRD ANNUAL SESSION OF THE IOWA STATE MEDICAL SOCIETY TO BE HELD AT SIOUX CITY MAY 13TH, 14TH, AND 15TH, 1914.

Special sleeping cars will be placed at the Union Station, Des Moines, at 9:30 P.M. May 12th for occupancy, and the train will leave at 1:10 A.M. May 13th, arriving at Sioux City at 8:40 A.M. May 13th.

A dining car will be attached serving breakfast into Sioux City, so that members will be ready for the opening meeting at 9:00 A.M.

The sleeping car rates will be \$2.00 for lower berths and \$1.60 for upper berths. The charge for a drawing-room will be \$7.00.

The one way railroad fare from Des Moines to Sioux City will be \$3.88 and the round trip, \$7.76.

We would recommend that members outside of Des Moines make their reservations by letter or telegraph immediately.

Returning: Trains leave Sioux City at 5:55 A. M. arriving in Des Moines 1:10 P. M. and 11:40 P. M., respectively.

Address all communications to **H. W. WARREN,**
City Passenger Agent, 410 Walnut St., DES MOINES, IOWA

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ADDRESS OF THE PRESIDENT

THE EDUCATION OF THE SPECIALIST

LEE WALLACE DEAN, M. S., M. D., F. A. C. S., Iowa City.

The last fifty years has witnessed many important changes in medicine and medical practice. Not the least important of these changes has been the appearance of specialism. Its appearance in medicine is only a manifestation of similar changes in all the walks of life. One man no longer builds all the parts of a house; one lawyer no longer considers himself an authority on all branches of the law; labor has divided and subdivided itself, and defined the duties of different individuals. To me it seems that we are entering now upon an era in medicine which might properly be called the era of specialism. Harris has aptly said that "specialism and specialists in medicine have come to stay, like it or not as we may".

As to whether or not this specialism is to be founded on narrow or broad principles depends very much upon the medical profession itself. We can have specialists, excellent in the most isolated part of their work, whose education has been confined strictly to their specialty, and who see nothing outside of their limited domain; or we can have specialists in the true sense of the word,—men with broad, well built foundations and a grasp of all those things which pertain to their specialty,—men who are not only specialists but physicians as well.

We have had and still have these two classes of specialists. And now let us look for a moment at what have been the results of the labors of these two classes of men. The results of the first class have been unstable, so much so that specialists as a class have lost

caste with the backbone of the medical profession, the general practitioner. The second class has produced results that have helped the general practitioner, not only in the management of individual cases, but in understanding the underlying pathology of sytemic conditions. To illustrate: in ophthalmology individuals of the first class have said all cases of epilepsy can be cured by glasses; likewise of migraine. Those of the second class tell of the improvement that may come in these diseases by correcting errors of refraction or muscle balance, because of the removal of stress or strain from the central nervous system. Their broad conception of the pathology of epilepsy or migraine is such that they would say a case of apparent epilepsy or of migraine, cured by such a procedure is not epilepsy or migraine. I can well remember when the members of the first description so outnumbered those of the second that specialism was in disgrace, and it was not pleasant to be called a specialist.

In speaking of specialists necessarily I do not limit myself to members of that specialty to which I belong, but have reference to the members of all specialties in medicine, or which twenty-three different varieties were recognized at the meeting of the Seventeenth International Congress of Medicine.

It is my purpose today to say a few words regarding the education of the specialist.

Those of you who have been interested in this subject know that it has been receiving the attention not only of the special medical organizations but of the American Medical Association as well. At this time committees are at work trying to formulate definite ideas regarding the best possible procedure. I think I am safe in making the prediction that in the next ten years this matter will be definitely decided, and that every one of you will not only be interested in the matter because it will affect seriously the standing of the medical profession, but because you will have and will exercise an influence in deciding this matter. And in this connection, let me say that this society should be among the leaders, and not a follower in the moulding of public opinion.

I have looked into the methods of educating specialists in the old country and find nothing there for us to pattern after. There, as here, the degree of M. D. allows a man to practice any or all of the specialties; and he may prepare himself as much or as little for the practice of any one specialty.

Our first specialists were general practitioners who gradually dropped a part of their work and confined themselves to a certain branch of medicine. These men educated themselves. Why? Because there was no other way of securing such an education. These men were pioneers in the field. They were great men. No one had gone before. It was necessary for them to cut the trail. This was done with the expenditure of much time and energy; also, I know, at great disadvantage to some of their patients. At that time it was

necessary for the specialist to do the best he could with his limited opportunities for learning. Today there is no excuse for an individual to practice a specialty until he has thoroughly mastered the advances in it and perfected himself in its technic. Every general practitioner is entitled to demand of every specialist to whom he may desire to refer a case for special treatment that he have this thorough training. He refers the case because he feels his lack of special training does not justify him in attempting the work. He has a right to assume that the specialist will confine himself to his specialty, because, in medicine there is no specialty that any one man can wholly master in his life, even by devoting every hour of his time. There is always something left to learn.

When we enter the practice of medicine and surgery the law demands evidence of a certain proficiency in our profession before we are allowed to practice. Unfortunately such requirements are not demanded of specialists. And yet by the law, one who claims to be a specialist is required, in case of suit for damages, to possess more knowledge and skill in his specialty than is a general practitioner. Now if the law assumes this special proficiency to exist in all individuals passing as specialists, why should not the same law protect its people by demanding special preparation and proficiency before one can enter into the practice of his specialty. Legislation must go hand in hand with the development of the education of the specialist to bring about the best solution of the problem before us. The public has just as much right to be protected from a poorly trained specialist as from a poorly trained dentist.

The foundation of every specialty is anatomy, pathology, and internal medicine. The mere clinical side of the specialty may be obtained in a specialist's office or as interne in a hospital for special work. An individual thus prepared may do good clinical work. He is not, however, equipped to keep up with the progress of his profession. Neither is he equipped for original work. He is hardly better fitted for the practice of his specialty than is a general practitioner fitted for general practice when he has taken two years in a medical college and then studied with some practitioner.

It goes without saying that a few weeks or months in a post graduate school does not make a competent specialist. Most post-graduate schools, as we have them today, are for the benefit of the general practitioner, at least so far as their special training is concerned. Many a general practitioner finds it absolutely necessary for him to do some of the so-called special work. He can secure work in these schools along certain lines and do some of this work. Those of you who have done this, I am sure, realize that the proper education for specialism has not been secured.

The only place for the development of a specialist is in our universities. I am firmly convinced of this. Without doubt the scientific part must be placed solely under the control of the uni-

versities. In as much as the universities are amenable to the public opinion of such bodies as our own and as they stand for increasingly higher ideals, there is a guarantee that the instruction provided will be thoroughly scientific.

Two years at least is necessary for the education of any specialist. That is, two years after having secured his doctor's degree. This work is certainly soon to be done in the state institutions, because proper education can only be given by an institution with a financial loss. This, I believe, to be axiomatic. The student must get in addition to clinical work and lectures in his specialty, a thorough course in anatomy and pathology. At the University of Iowa in the post-graduate work for the head specialties two hours per day in the pathological laboratory alone is required. Also opportunity must be given for work in internal medicine. And a well equipped anatomical laboratory with abundance of material and good instruction must be at hand both for anatomical and for operative work. The expense of running such an institution is such that it is ridiculous to think of its being met by fees. The institutions must be able to give instruction at a financial loss. The state should require definite proficiency from specialists and make definite provisions for such proficiency.

In connection with the course of instruction every student should carry out some piece of original work and prepare a thesis. He should not be merely an imitator but also a producer. He should learn how to do this while preparing his work. At the completion of his work some degree should be given to indicate to the profession, and to the people, his preparation. In connection with work in some specialties definite recommendations concerning, I think, will soon be made by the American Medical Association and other societies. As a requirement for a degree the student should present a thesis showing original work in laboratory or clinic.

The clinical part of the instruction is the most important part. Because this is the part that is overdeveloped in our methods of educating specialists today, is no reason why it should not receive the prominence it deserves in arranging our final course. The mere doing of much clinical work is not in itself the proper method. The student must not only treat and care for patients, but his work must be carefully scrutinized and corrected. The patients under his care should be seen daily by chief or assistant and the case discussed. New cases, the student should work up carefully and his records be approved or disapproved by the teacher. Clinical talks are very important and should be frequent.

The work which the chief of clinic and his assistants have in teaching specialism is a real task. The students are not there simply to help with patients, but are there to be taught. After they have mastered their anatomy they should operate first in the dead house, and then, under the direct supervision of their chief, they

should operate on the patient. It is not fair to students or patients for the students to operate without competent supervision. One operation carefully supervised is worth more to the student than a dozen performed without direction. It is needless to dwell on the wrong to the patient in having the work done in any other way.

The sooner an individual begins the study of his specialty the better specialist he will be. It is only by experience and repeated effort that the best there is in a man is produced, and it sometimes seems to me that we only just begin to perfect ourselves in time to become old and go backward. I do not mean to say that the special training should begin early and interfere with the building of the foundation. But a year of general practice is not necessary or even advisable. The student needs pathology, surgical technic and anatomy, just as much as internal medicine. But he can get more good from a proper course in medicine, studying cases with complications involving his specialty than in any other way. The great majority of the special cases are also medical cases.

The element of time is a factor to be considered. Already the course in medicine is six years, counting the two years of premedical college work. It will probably soon be seven by the addition of a clinical year. Add to this two years for training in the specialty and it makes the time very long. The student must have strong financial support for such a siege. In this connection I might say that the time is ripe for the state to make some provision for the medical education of students too poor to carry out the present six year course. It goes without saying that it is the function of the state to provide its own doctors. If some provision is not made for the education of poor students we will surely lose from the profession many men who would be not only an honor and a benefit to our profession, but of untold value to the state as a whole.

To me it seems advisable to allow the student to choose his specialty at the end of the fourth year, that is at the end of his sophomore year in the medical college, if he so desires. We have been doing this for a number of years at the University of Iowa. Those choosing the specialty do all the regular work, and also, must do extra work along this line. I have never heard a suggestion from any of the teachers that the general work of these students is in any way interfered with.

If the student, at the end of his second medical year, decides on his specialty, during the remaining two years he should spend as much time as possible in the special clinic. Let me repeat, he should do this special work in addition to the regular undergraduate work, and without interfering with it. Optional courses which allow the individual to see hundreds of cases should be arranged. In the head specialties at least the fundamental thing is to learn to see and interpret what is seen. The ability to see is only developed by looking at a great number of cases.

The Council on Medical Education has reduced the time for the undergraduate study of the head specialties to 140 hours. This does not give the general student time even to learn to see, and specialists of the head will be more in demand in the future than in the past. I would judge that the idea of the Council on Medical Education was to not have the graduate do any special work so far as the head specialties is concerned.

To return to the undergraduate work of the specialist. At the University, at the beginning of the junior year three students may elect this work. Unfortunately a much larger number always apply, but only three can be accommodated. These students not only see cases, but during their senior year assist by doing minor work in the out-clinic. During the first post-graduate year the student should have under his care constantly at least twenty-five cases in the house and out-clinic. His care of these cases should be carefully supervised. He must keep complete clinical records of these cases. He should serve in the operating room alternately as first assistant, second assistant, and as clerk. As clerk, I think, the student gets most good. He must see and describe minutely each step of the operation. My experience indicates that it takes a long time for the student to properly describe what he has seen and what he apparently thoroughly understands.

It seems to me advisable, if a seventh or additional clinical year, be added to the curriculum of our medical college, that it be devoted to special work. If a seventh clinical year be added surely the young man should be devoting his time to his chosen field. He should not receive any special degree until the completion of an eighth special year.

In the second post-graduate year the student should be senior to the first year students, both in the out-clinics and in the house. He should supervise the work of the clinic, serving of course under the assistants. He should make careful and prolonged study of complicated or rare cases. He must do every operation, even the major ones, under the direct supervision of a superior. He should aid in the conduct of ward classes, out-clinics, and with the operative work in the dead house.

Throughout the two years his study of anatomy, pathology, and internal medicine must continue. This should comprise the minimum course for the education of a specialist. It does not make him a thoroughly developed specialist. Like the general practitioner he must be a constant student. He must grasp every opportunity for visiting clinics, and continuing with his anatomical and pathological work. Above all things must he continue his work in general medicine, for medicine and its specialties will progress together along a common road.

ANAPHYLAXIS*

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The symptom complex of anaphylaxis, or protein hypersensitivity has recently become a matter of great interest to the medical practitioner, not only because therapeutic sera are employed so extensively in daily practice that a knowledge of their secondary effects is imperative, but also because the experimental analysis of anaphylaxis has yielded information which has been utilized, more or less critically, for the explanation of a large variety of normal and pathological processes. In truth, there is a distinct tendency observable at present to call anything an anaphylactic symptom when in doubt as to its causation. This tendency is strongly to be deprecated, and probably would not exist to the same extent if the fundamental postulates and phenomena of anaphylaxis were realized with some clearness. Because the facts which have been established in the study of anaphylaxis are at least as interesting and much more valuable than the fanciful employment of the term anaphylaxis, I shall venture to lay before you a brief consideration of some of the more important changes observable in experimental protein hypersensitiveness.

The basic conditions of anaphylaxis were established by the labors of Richet, Arthus, v. Pirquet and Schick, Theobald Smith, Otto, and Rosenau and Anderson. These investigators demonstrated among other facts that dogs, rabbits and guinea pigs would tolerate an injection of a foreign soluble protein, horse serum, for example, without any obvious trouble; but if the same animals were again injected with the same protein after the lapse of some weeks, then serious symptoms and even death occurred. The formerly harmless horse serum had now apparently become a violent poison when it was injected a second time. The horse serum, however, was not toxic on second injection unless a certain length of time elapsed between the two injections; if repeated within a few days no harmful effects were obtained, and the animal behaved like one which received the serum for the first time.

These important observations showed unequivocally that a harmless protein may cause reactions like a poison provided that certain conditions are fulfilled: the protein must be injected into an individual which has already been treated by the same substance, and a certain length of time must pass between the two injections before a toxic effects can be obtained. These are the fundamental conditions for the production of protein hypersensitiveness or as Richet called the process, anaphylaxis. Richet coined this word to indicate that the process was the opposite of a protective immunity

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such as is obtained, for example, when diphtheria toxin is injected into an animal; instead of being protected by the first injection of a protein the animal becomes abnormally sensitive to it.

Three stages can be clearly distinguished in this process: a, sensitization; b, incubation; c, intoxication. These three stages must now be considered a little more in detail.

Sensitization. Only members of the protein group, whether of animal or plant origin is immaterial, have been shown to be able to sensitize, and there is no evidence on record that carbohydrates and fats possess this property. The proteins themselves in order to sensitize must be soluble; they must possess their characteristic structural configuration which differentiates them from other proteins; and they must not normally be present in the circulation of the animal to be sensitized. A guinea pig thus can easily be sensitized by the subcutaneous injection of the serum from other species of animals, but it cannot be sensitized by the serum of its own species.

The amount of protein necessary is extremely minute. Guinea pigs have been sensitized by 0.000,001 cc of horse serum (Rosenau and Anderson), and with crystallized egg albumen. Wells found 0.000,000,05 gram sufficient. In general, however, larger quantities are necessary to produce a satisfactory degree of sensitization for investigation.

It seems that all animals can be sensitized, although the degree of sensitiveness and the ease with which it is obtained varies in the different species. The guinea pig is most easily sensitized; next comes man, then the rabbit and the dog.

The duration of the sensitized state varies in the different species. A guinea pig is sensitized for life (about three years); in man, anaphylactic reactions have been obtained more than seven years after the sensitizing dose; in the rabbit and the dog the state may last for some months.

There are various methods for incorporating the foreign protein in order to sensitize. In the laboratory it is most convenient to inject the material subcutaneously, but it may also be given intravenously, intra-peritoneally, or in any way which brings the protein in its characteristic state into contact with the tissue cells. This means that administration per os is to be avoided, for the digestive juices degrade the protein into components which on absorption do not cause sensitization; yet even by this method sensitization may be accomplished if the protein is fed in large quantities as Rosenau and Anderson among others have shown. There are still other methods of great theoretic importance which lead to sensitization. Thus the inhalation of a protein in a finely divided state, its inunction in the form of a salve, its injection into the rectum or vagina, have all caused sensitization in the guinea pig. Moreover, the sensitized state may be inherited, for Rosenau and Anderson discovered that the young of a sensitized female pig were hypersensitive to the same

protein to which the mother was sensitized. The male does not transmit the sensitized state.

The sensitization is largely specific, that is, an animal prepared with horse serum does not give an anaphylactic reaction when it is reinjected with bovine serum, but reacts only when horse serum is used for reinjection. Closely related proteins may, however, somewhat sensitize one against the other; Wells and Osborne report, for example, that gliadin and hordein, which are similar though chemically distinct plant proteins, can sensitize one against the other, though the reaction obtained is not as great as when the same protein is employed for both sensitization and intoxication. Similar group reactions are met in the study of hemolysins, precipitins and agglutinins.

Sensitization may also be accomplished by the injection of extracts from some of the animal's own organs, provided that the proteins of these organs show a marked difference in structure from that of the serum. The best example of such a biological differentiation is the crystalline lens of the eye. Guinea pigs have been sensitized by the injection of an extract from one of their own crystalline lenses, and intoxicated by a subsequent injection of an extract made from the other lens. There are investigations on record which indicate that other organs like the liver, kidney, spleen, thymus, etc., are formed of proteins sufficiently different in structure from those occurring in the serum, that they may act as sensitizing substances when, through accident or experiment, they enter the circulating juices of the animal of which they form a part.

In this connection it will be recalled that Abderhalden's recent work indicates the capacity of the body to produce specific proteolytic ferments when the organism's own proteins occur in places where they do not normally belong, as, for example, when chorionic villi or their products enter the circulation of the maternal organism. This forms the basis for his well known test for pregnancy.

Incubation. When an animal has been injected with a sensitizing substance (anaphylactogens or antigens as they are also called), the state of sensitization is not obtained at once. A number of days must pass before the injected foreign protein has so altered the reaction of the animal that a second injection produces pathological symptoms. This necessary time interval varies between 7-15 days. If the injection is repeated earlier only slight or no symptoms are obtained.

Intoxication. After the period of incubation has passed, the sensitized animal, though apparently differing in no obvious way from its untreated mates, has acquired the capacity of reacting violently to the protein used for sensitization. The violence and character of this response depend largely upon the site of injection. If the injection is given subcutaneously a local reaction results with usually only slight or no general symptoms; if on the other hand the

protein is injected intravenously general reactions develop which are severe and may even end in death, as in the guinea pig.

The dose necessary to intoxicate is much larger than that which suffices to sensitize. It has been calculated that the intoxicating dose (second injection, or reinjection, as it is also called) is 200-4000 times greater than the quantity which will sensitize. This disparity between sensitizing and intoxicating doses probably explains why bacterial vaccines do not cause severe anaphylactic reactions: the amount of bacterial protein injected is too small to call forth a noticeable response in a treated individual.

Before considering the interesting symptoms and signs which occur in the anaphylactic reaction, permit me first to call your attention to two important phenomena, passive anaphylaxis and anti-anaphylaxis.

Passive anaphylaxis. It was stated before that an animal is sensitized by the parenteral injection of a foreign protein. This is the method of producing "active anaphylaxis" and is not the only procedure available to bring on a sensitized state. Gay and Southard, and Otto showed that a normal animal can be sensitized if it receives an injection of blood or serum from an animal which is already sensitive. Thus a guinea pig may be sensitized by injecting it with the blood or serum of a rabbit which is already sensitized to some foreign protein, horse serum, for example. Such a guinea pig will respond with typical anaphylactic symptoms when injected with horse serum for the first time. This is the method of producing passive anaphylaxis.

In passive anaphylaxis a period of incubation is also necessary though it is much shorter than in active anaphylaxis. A guinea pig may be rendered passively anaphylactic within 24 hours after the immune serum has been injected.

Passive anaphylaxis demonstrates that an anaphylactic reaction-body is formed during the process of sensitization which can transfer the sensitized state to a normal animal. This reaction-body is also called an immune-body or antibody by the majority of investigators. The anaphylactic reaction-body does not occur in an actively sensitized animal before that animal is itself sensitized, and it disappears during and for some time after a non-fatal anaphylactic response.

Anti-anaphylaxis. When a guinea pig recovers from an anaphylactic intoxication, Rosenau and Anderson observed that the animal became refractory to another dose of the same protein, and this refractory state was termed anti-anaphylaxis by Besredka and Steinhardt. Anti-anaphylaxis is established very swiftly when minute sublethal doses of the protein used for sensitization are injected intravenously; after intra-peritoneal and subcutaneous desensitizing injections, hours are necessary to establish the same state. It must be clearly kept in mind that this desensitization probably is

never complete, though Besredka has been able to raise the tolerance of a guinea pig by graded intravenous injections at ten minute intervals beginning with 1-4, then 1, 10 and 100 fatal doses, so that finally 1000 fatal doses caused only moderate symptoms but not death.

The state of anti-anaphylaxis is specific and is directed only against the protein used for sensitization and intoxication. If an animal has been sensitized by a number of different proteins, desensitization by one protein does not abolish sensitiveness towards the other proteins.

This refractory state does not last long; in the rabbit it disappears after a few days. In the guinea pig repeated massive doses bring about a refractory condition which may last for months, but these animals according to Weil are really in a condition of marked sensitiveness, and Weil was able to intoxicate them by injecting large doses of the protein used for sensitization.

The anaphylactic reaction. We are now in a position to consider the more striking symptoms which reinjection calls forth in a sensitized organism. This reaction is always the same no matter what foreign protein has been employed to produce it; plant proteins develop the same anaphylactic picture as proteins obtained from animals.

The general character of the anaphylactic reaction varies with the species of animal and to a certain extent with the site of injection. The variation in the different animals is due to the different extent to which the various systems of organs are affected; the site of injection modifies the symptoms because the rate of absorption decides the severity of the reaction, a subcutaneous injection, for example, may give only local effects. If the reinjection is given intravenously into well sensitized animals, the following are the most important symptoms noted: the guinea pig exhibits profound respiratory disturbances and acute death; the rabbit often shows acute death with cardiac and vaso-motor changes; and the dog exhibits marked gastro-intestinal and circulatory disturbances.

The clearest comparative view of these various disturbances will be obtained if we briefly consider the different systems of organs involved in the anaphylactic reaction, and this will bring out best the differences existing in the three species of animal which have been most extensively studied.

Respiratory symptoms are most pronounced and severe in the guinea pig, and death is caused by an asphyxia within about five minutes in highly sensitized animals. The asphyxia is produced by a tetanic contraction of the bronchiolar musculature so that air can finally neither enter nor leave the lungs in spite of the most violent efforts of the animal. After all respiratory attempts have ceased and while the heart is still beating, autopsy shows that the lungs do not collapse when the chest is opened, as normal lungs do, but

remain fully distended in an inspiratory position. No collapse takes place when the organ is completely excised. There is practically no pulmonary edema, but the entire lung is full of air; there is hardly any collapse when pieces of the organ are cut off. The same lung picture, which is really an exaggerated type of asthma, may readily be obtained when the entire central nervous system of the animal has been destroyed by pithing, life being maintained by artificial respiration (Auer and Lewis, Biedl and Kraus). A still more obvious demonstration that the central nervous system is negligible in the production of this picture is furnished when the excised sensitized lung is perfused through the pulmonary artery with the protein used for sensitization while the organ is rhythmically expanded and collapsed by means of artificial respiration. (Dale).

In the rabbit and dog, however, there is no dyspnea which is attributable to a failure of the lung to do its work, nor does the lung after death exhibit the same intravital immobilization in an inspiratory position except occasionally in dogs which succumb acutely. In the latter instance, the lungs do not collapse completely when they are excised and they form a fair approximation of the extreme asthmatic type of lung which is found in the anaphylactic guinea pig.

The heart is most profoundly affected in the anaphylactic rabbit, and acute death in this species of animal is due to a loss of contractility and irritability of this organ. Immediate autopsy of such a rabbit after the last group of respirations shows the heart in diastole with only slight or no ventricular contractions; mechanical or electrical stimuli applied to the ventricles fail to cause a contraction; moreover the right ventricle often appears gray and opaque, and its endocardial surface may be as tough as connective tissue. The left ventricle, however, does not show this change in color or consistency. Similar anaphylactic cardiac changes can also be obtained after the central nervous system has been destroyed. (Auer).

Cardiac changes are not limited to the acutely fatal type of anaphylactic reaction in the rabbit; they also occur in anaphylactic intoxication of moderate severity. With the electrocardiograph the great majority of rabbits examined showed changes in the form of the electrocardiogram indicating a damage to the ventricles (increased, flattened or negative T waves, development of S waves) and also disturbances in conduction between auricles and ventricles (partial or complete auriculo-ventricular dissociation, synchronous contraction of auricles and ventricles.) All these changes occur swiftly after the reinjection and then disappear; at times the alterations appear and disappear a number of times before the animal either succumbs or recovers. After recovery another injection of the protein causes no characteristic cardiac disturbances for the animals are now anti-anaphylactic. (Auer and Robinson).

In the anaphylactic dog, electrocardiographic examination shows the presence of abnormalities in about 50 per cent of the animals. Here also temporary disturbances in the conduction time between auricles and ventricles leading to partial heart block, and abnormal types of electrocardiograms due to abnormalities of ventricular contractions are obtained. The chief types of these disturbances I hope to demonstrate to you later by means of lantern slides. As in the rabbit these cardiac disturbances occur fairly promptly after the injection, last a number of minutes and then give way to a practically normal form of electrocardiogram. After recovery, a further injection of the protein used for sensitization causes no changes; the animal is anti-anaphylactic. (Robinson and Auer).

These cardiac disturbances in the dog are probably produced independently of the central nervous system, for section of the vagi does not prevent them. In the rabbit, however, cardiac block was only observed in individuals whose vagi were intact.

Anatomically the heart of an anaphylactic dog which succumbs acutely does not show the rigor-like changes which are observable in the rabbit under similar conditions, but both frequently show hemorrhages into the conducting system between auricles and ventricles, and these hemorrhages are perhaps at least partly the cause of the abnormalities which the anaphylactic heart exhibits.

In the guinea pig and man no undoubted functional disturbances of the heart during an anaphylactic reaction have been described. Partial heart block has been observed in the guinea pig within a few minutes after the reinjection, but this may be due to the asphyxia which anaphylaxis develops so swiftly in this animal.

Changes in the blood pressure occur during the anaphylactic reaction in the guinea pig, rabbit and the dog, but are most characteristic in the dog. During or shortly after the intravenous reinjection in this animal the blood pressure sinks abruptly within one minute from the normal level of about 120 mm, to a pressure of 40 mm and less. At the same time the cardiac and respiratory oscillations on the curve become much smaller while the pulse rate remains the same or shows a moderate decrease. The low level is maintained for a varying period of time and then slowly begins to rise if the animal recovers; after several hours or by the next day the blood pressure is again normal. If the animal succumbs, spontaneous respiration often ceases shortly after the blood pressure reaches the 10-20mm level and the heart stops beating a few minutes later.

This profound drop in blood pressure, which was first described by Biedl and Kraus, is one of the most striking reactions in anaphylaxis, and is caused by a paralysis of the vasomotor nerve endings in the splanchnic area, for stimulation of the peripheral ends of the splanchnic nerves gave no rise of blood pressure, nor did the injection of adrenalin during the early stages of the blood pres-

sure drop cause a rise. If, however, barium chloride which acts directly on the vascular musculature, was injected a rise in blood pressure occurred and the animals recovered promptly.

In the rabbit and guinea pig the drop in blood pressure exhibits differences from that observable in the dog, indicating that other mechanisms are probably called into action than in the dog.

It might be assumed that the drop in blood pressure and consequent anemia of the heart perhaps accounts for the cardiac disturbances which the electrocardiograph reveals in the dog. This is probably not true, however, for there is no definite relationship in the dog between the drop in blood pressure and these disturbances. A profound drop in blood pressure caused by an anaphylactic reaction is not invariably followed by abnormalities in the heart beat; and abnormalities when they do develop, sometimes occur with the drop in pressure, sometimes a number of minutes after the blood pressure has reached a low level. Again, the heart usually shows normal electrocardiograms long before the blood pressure has reached its former level. It seems most probable on the whole that neither the blood pressure drop nor the cardiac abnormalities bear any etiological relationship to each other, but that both are the expression of a primary anaphylactic effect.

The blood shows a more or less marked decrease in coagulability depending upon the species of the animal. In the dog, the blood obtained during the stage of low blood pressure may remain fluid for a few days. (Biedl and Kraus). In the rabbit, the delay is less marked and a soft clot usually forms within thirty minutes to several hours. In the anaphylactic guinea pig the blood shows only a moderate alteration in its capacity to clot.

Like blood, the lymph from the thoracic duct of the dog has been found incoagulable when tested during the early stages of the anaphylactic response.

The delay in coagulability is attributed to an antithrombin in whose formation the liver is thought to be an important factor.

In addition to the delayed coagulability, the blood shows an outspoken leucopenia due to a diminution of the polymorphonuclear leucocytes in the circulating blood. This leucopenia was first observed in the serum disease by a v. Pirquet and Schick and by Biedl and Kraus in the anaphylactic dog.

Both the voluntary and involuntary muscles are the seat of anaphylactic changes. The intestines and uterus of a sensitized guinea pig contract tetanically during the anaphylactic reaction and this response may be easily obtained with the excised structures. (Schultz, Dale). If a loop of intestine or a uterine horn from a sensitized guinea pig is placed in an oxygenated Ringer solution, only moderate rhythmic contractions are observable or recorded. But if the protein used for sensitization is added to the bath liquid a powerful tetanic contraction, often lasting many minutes, is produc-

ed. The amount of protein added need not be great; a concentration of less than 1:400 000 is amply sufficient to cause a typical response. After a uterine horn, for example, has responded to the protein with which it was sensitized by a tetanic contraction and subsequent relaxation, the further addition of protein does not cause a second contraction; the muscle preparation is anti-anaphylactic. Passive anaphylaxis may even be obtained with this test object. Dale perfused a normal uterus preparation for some hours with the serum from sensitized guinea pigs and obtained a typical contraction when the corresponding protein was added to the Ringer solution bathing the passively sensitized uterine horn.

Striated muscles also show a series of changes. In the rabbit the white muscles of the thigh and the diaphragm may show rigor-like alterations while the animal is still alive; the muscles are gray, opaque, and firmer, tougher than normal. Microscopically the muscle fibres are swollen, the striations are obscured and there is cloudy swelling or even hyaline degeneration. Similar alterations are also obtained in the heart of rabbits which succumbed to the reinjection. (Beneke and Steinschneider; Worzikowski-Kundratitz).

These alterations in the smooth and voluntary muscles have been obtained in the rabbit and the guinea pig; it is quite probable that they also occur in some extent at least in the dog, though there are no observations available as yet upon this point.

The gastro-intestinal canal is most affected in the dog. This animal shows vomiting, and the vomitus according to Richet may be bloody and even fecal in character; in addition there are profuse diarrheas which are occasionally mixed with blood. It must be noted that both vomiting and diarrhea are not obtained in the dog when the animal is fully anesthetized.

In the guinea pig and rabbit vomiting and true diarrheas are not obtained during the anaphylactic reaction, but both animals show increased peristalsis and a larger number of fecal pellets are passed than normally.

Examination of the gastro-intestinal canal of the dog and guinea pig with the x-ray has yielded some interesting information. Schlecht and Weiland report that after reinjection the stomach and small gut exhibit a short period of increased peristalsis which is swiftly followed by complete quiescence in a state of contraction. This tonic state may last up to three-quarters of an hour and seems especially outspoken in the small intestine which looks on the screen like a cord or a series of beads. These results are quite in agreement with the observations of Schultz and of Dale on excised portions of the gastro-intestinal canal from sensitized guinea pigs.

The glands of the body are also affected in the anaphylactic reaction. The pancreas of the dog shows an increased secretion, and this may aid in the production of diarrhea, for Bayliss and Starling observed that the repeated injection of secretin at times caused

fluid evacuations. The salivary glands also show an increased activity in the same animal.

The most important role is, however, attributed to the liver. According to Manwaring, and Voegtlin and Bernheim, the anaphylactic drop in blood pressure in the dog cannot be obtained if the liver is excluded from the general circulation (Eck-fistula with ligation of the portal vein and clamping of the hepatic artery), and Denecke reports recently that dogs with an Eck-fistula cannot be sensitized. In the rabbit and guinea pig, however, the liver does not play such an important part, at least as far as the picture of intoxication is concerned. Both in the rabbit and in the guinea pig typical anaphylactic reactions may be obtained after both the thoracic aorta and inferior vena cava are clamped, a procedure which entirely excludes all the subdiaphragmatic structures.

Pathological alterations due to anaphylaxis have also been observed in the adrenals, kidneys and lymph glands.

The central nervous system, curiously enough, seems to be but little affected in the anaphylactic reactions which we know, and all the more important phenomena can be obtained when the central nervous system is destroyed: the anaphylactic lung in the guinea pig; the blood pressure drop in the dog; the loss of contractility and irritability of the heart in the rabbit; the tetanic anaphylactic contraction of the gut and uterus, all these effects may be obtained just as promptly and certainly when the nervous system is destroyed as when it is intact. There is therefore no doubt that these reactions are caused peripherally. It must, however, be emphasized that the experiments in which the central nervous system was destroyed do not prove that no anaphylactic reactions occur in the nerve cells; they merely demonstrate that the central nervous axis is not necessary for the production of some typical anaphylactic reactions.

In the peripheral nerve trunks of sensitized rabbits a loss of faradic irritability has been described by Yamanouchi when the nerve was covered with a cotton pledget soaked with the protein used for sensitization. This effect is perhaps due to an edema such as Fröhlich observed in the mesenteric nerves of sensitized frogs when the protein was applied locally.

Local anaphylaxis. The most striking phenomenon of local anaphylaxis is observed in the rabbit which is injected subcutaneously a number of times with horse serum at 4-5 day intervals. This is the phenomenon of Arthus. After five or six injections in different places, the last injection produces rapidly a firm whitish, subcutaneous mass which is not septic, and is composed largely of eosinophiles. The skin over the mass becomes inflamed and later pales, then a spot of gangrene develops which produces a slowly healing wound. The general condition of the animal remains excellent as a rule.

Another interesting and important type of local reaction has

been observed in the sensitized guinea pig. When such an animal is allowed to inhale a fine spray of the protein used for sensitization, or when a minute quantity is injected into the trachea, local changes occur in some of the lobes of the lung which are identical with lobar pneumonia, according to Friedberger and Ishioka. Still other examples of local anaphylaxis are the cutaneous tuberculin reaction of v. Pirquet, or the ophthalmo-reaction of Wolff-Eisner and Calmette, and the mallein test for glanders.

The anaphylactic reaction in man. We have so far considered only the anaphylactic manifestations which occur in the lower animals, where their study and experimental analysis is readily undertaken. But anaphylactic reactions are also observable unfortunately in man, for man is at least as readily sensitizable by a foreign protein as the rabbit, and sensitization occurs whenever a therapeutic serum is administered. It must be stated at once, however, that the grave dangers incident to a second injection of a serum are apparently considerably less in the human subject than in the lower animals. Most of the fatalities reported in human beings after the administration of a therapeutic serum occurred when it was given for the first time, and only exceptionally when the injection was repeated after the necessary incubation period.

At least some of the fatalities which have occurred after the repeated intraspinal injection of anti-meningitis serum seem referable not to anaphylaxis but to increased intracerebral pressure which led to an inhibition of the respiratory and vasomotor centers: the immediate, almost instantaneous onset of the collapse, preceded by a very short stage of excitation; the short period of time between the fatal injection and the one immediately following it; the amelioration of the symptoms in those cases where some of the injected serum was withdrawn, all these facts speak for pressure symptoms rather than for anaphylaxis. It seems probable that if the precaution is observed to withdraw an amount of spinal fluid equal in bulk to the serum to be injected that severe "anaphylactic" symptoms will not be observed with the same frequency as heretofore. A mild anaphylactic reaction, like the serum disease which does not threaten life, occurs often after the intraspinal injection of serum, but need cause no worry to the physician, though the manifestations are disagreeable to the patient.

Severe anaphylactic reactions occur especially when a therapeutic serum is injected into individuals with chronic respiratory trouble, especially asthma, and in these cases a number of deaths have been reported by Gillette and others. Quite a small dose, less than one cc given subcutaneously, may bring on most alarming reactions. The symptoms in these acute cases are like those observable in highly sensitized guinea pigs, rabbits or dogs: a rapidly developing tremendous dyspnea with cyanosis and subsequent convulsions, which are in all likelihood caused by an asphyxia due to a con-

striction of the finer bronchioles; or collapse without convulsions associated with a weak, thready pulse, which are probably caused by a strong drop in blood pressure combined perhaps with a cardiac weakening.

The mild type of anaphylaxis, the serum disease of v. Pirquet and Schick, every physician has had occasion to observe, though its occurrence now is enormously less than what it was during the early days of diphtheria antitoxin administration. Then 100-200 cc were injected in order to give the requisite number of antitoxic units and serum disease occurred in about 85 per cent of the patients; at present 5-15 cc of the anti-diphtheric serum has the same antitoxic value, and the serum disease is observable now only in 4-5 per cent of the cases.

The reactions noted during the serum disease are briefly as follows: Eight to twelve days after the serum has been injected, fever and skin eruptions of apparently inexhaustible variety, develop. The fever is one of the most constant symptoms; it may be continuous or remittent in type and may reach 104° and more. The skin eruptions may be urticarial, scarlatinoid, morbilloid or polymorphous, and appear in crops. Both the fever and the exanthems may last from a few days to several weeks. In addition to these alterations there is a general swelling of the lymph glands, edema of the face and dependant parts of the body, leucopenia and occasionally severe joint pains without objective changes. The mucous membranes are only exceptionally involved. The edema when present may be pronounced, but as a rule there are no symptoms of kidney irritation; when albuminuria occurs it never exceeds 1-4 per cent. Shortly before the serum disease comes to an end, the edema begins to decrease and this decrease has therefor a prognostic value. A similar value is placed upon the beginning decrease in size of the swollen lymph glands; this also indicates that the end of the serum disease is in sight.

When a patient is again injected twelve to forty days after the first injection, an **immediate reaction** occurs which may be local or general or both. Within twenty-four hours there may be a marked local swelling associated with fever and exanthems. The symptoms are quite severe but last only one or two days.

If the time interval between the injections is 1.5-6 months an **immediate** and an **accelerated reaction** may be obtained. The accelerated reaction has an incubation period of five to seven days when fever exanthems, edema, etc., appear usually with severity but the duration of symptoms is short, about one day.

When a longer period than six months intervenes between the serum injections, only an accelerated reaction is obtained as a rule.

The appearance of an immediate or accelerated reaction in individuals injected for the first time is so rare, that in general their occurrence may be taken as an indication of previous treatment with serum.

While the serum disease produces considerable discomfort to the patient and anxiety among the laity, it rarely is dangerous to life.

Other forms of anaphylaxis in man are hay fever, horse asthma, and certain idiosyncrasies to protein foods like eggwhite or pork. Without going into details it may be stated that the individuals suffering from these diseases have become sensitized to the specific proteins which cause the attack. The sensitization may be inherited or acquired; when acquired it is probably at least partly due to an abnormal permeability of the gastrointestinal and respiratory mucous membranes.

The drug idiosyncrasies form an interesting chapter, but there is as yet no evidence that they belong to the same class which we have considered so far. All the anaphylactic symptoms which we have mentioned were produced by protein substances, and there is no experimental evidence that drugs like morphin, antipyrin, quinin, potassium, iodide, etc., when injected into animals can sensitize or produce anaphylactic reaction—bodies which permit the passive transfer of the sensitized state. The drug idiosyncrasies therefore should be classed among the anaphylactoid reactions.

The treatment of anaphylactic and anaphylactoid symptoms is largely prophylactic. The serum should not be too fresh, for fresh sera are more toxic than those properly aged. The initial decrease in antitoxic value when antitoxin is properly stored is not progressive and maintains the same level for a number of years according to Boehneke. Intravenous injections should not be used as a routine procedure, but only when the patient's condition demand it. When serum is given intraspinally the obvious precautions necessary to avoid pressure symptoms should be employed.

Caution must be exercised as soon as a reinjection becomes necessary after more than seven days or when an asthmatic individual demands the exhibition of serum. Under these conditions it is probably best to attempt to desensitize the patient by means of Besredka's method, which gives excellent results in guinea pigs. The principle is to inject subcutaneously or intravenously a fraction of the fatal doses. Some hours after subcutaneous injection, or five to ten minutes after an intravenous vaccinating dose the injection is repeated with a larger quantity. This procedure when done several times produces an anti-anaphylactic state which permits the introduction of several hundred lethal doses of serum without any harm. The process has not yet been fully tested out in man, and Weil for example, warns against expecting the same good results in the human subject which Besredka obtained in guinea pigs. For in man the lethal dose is not known, and one must start with a very small dose, probably not more than 0.01 cc; nor do we know when the anti-anaphylaxis obtained is sufficiently great to permit the introduction of the full therapeutic dose. Nevertheless the method of Besredka is

the only one practically available when serum must be administered to an asthmatic. Reinjections in the average individual, however, do not seem dangerous when the amount injected is small, and the site is subcutaneous. Nemmsen reports over a thousand cases where serum was administered at least twice and in not a single instance did alarming symptoms develop. In spite of this it will be wise to keep the possibility of trouble in mind when reinjections after the lapse of the incubation period become necessary.

When anaphylactic symptoms develop, the treatment is largely symptomatic. In asthmatic cases atropin is indicated to relax the bronchial musculature. This drug has given good results in guinea pigs where death is caused by a local contraction of the bronchial muscles. Adrenalin and chloral hydrate have also yielded favorable experimental results for this type of anaphylaxis.

For collapse due to low blood pressure adrenalin might be employed although Biedl and Kraus did not obtain good results with the drug in dogs.

When cardiac weakness develops, the administration of drugs belonging to the digitalis group if given at all must be very cautious, for they produce apparently the same alterations in the cardiac muscle as anaphylaxis.

For serum disease the treatment is purely symptomatic. It is seen that the treatment of anaphylactic symptoms on the whole is rather unsatisfactory, nevertheless it must be emphatically emphasized that the dangers incident to the warranted administration of therapeutic sera are vastly less than the dangers of the untreated disease.

Theories of anaphylaxis. A number of theories have been formulated to explain the causation of anaphylaxis. None of them are fully satisfactory but all of them have increased our knowledge and this after all is the main usefulness of any theory. The conception which has been especially fruitful is that of Vaughan. Vaughan has furnished evidence that every protein is composed of a toxic and a non-toxic fraction. When a foreign protein is injected into a normal organism this cleavage takes place so slowly that the toxic component at no one time reaches a sufficient concentration to cause obvious symptoms. This slowness of cleavage is caused by the lack of a specific proteolytic ferment, which however, is gradually formed. The specific ferment is then thought to be stored in various tissues in the form of a zymogen which can be activated by the protein which caused its formation. The preparation of the specific zymogen thus represents the period of incubation. When now the same protein is again injected, it activates the zymogen, proves an active ferment which splits the injected protein and forms a sufficient amount of toxic cleavage products to cause intoxication. Passive anaphylaxis, Vaughan explains by a transfer of the specific zymogen. Anti-anaphylaxis is thought to be due largely to a quantitative disproportion-

tion between the amount of ferment present and the foreign protein; a certain amount of ferment was used up in the anaphylactic reaction which caused the anti-anaphylaxis and the amount remaining is then too small to produce sufficient poison to cause a noticeable effect.

In conclusion permit me to emphasize the fact that no anaphylactic reaction is in itself diagnostic of anaphylaxis, for all of them can be produced by various means. The only thing which is characteristic about an anaphylactic reaction is the procedure by means of which it is obtained: after reinjection of the same protein which was used for sensitization. This criterion permits the differentiation between anaphylactic and anaphylactoid symptoms.

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CANCER AND SARCOMA OF THE BREAST*

A. M. SWALE, M. D., Mason City.

The death rate of cancer alone is appalling throughout the civilized world and apparently is on the increase. As one of the fatal maladies of mankind, it runs a close race with tuberculosis, and, with the decrease each year in the death rate of tuberculosis, due to years spent in educating the people, cancer will soon be at the head of the list.

It is the purpose of the writer to review, in a brief manner, the subject as it stands today, with the hope that, in the discussion which may follow, the physicians here assembled will get a new stimulus to go back among their clients and start a campaign of education.

We must give the people knowledge in things medical and surgical as well as in affairs of state. The true statesman may have his ideals of good government but it has been tritely said "No government can be stronger than its subjects". No matter how brilliant or skillful the surgeon may be, he can not do the impossible. Neither can he remove the little nodule from the breast in the pre-cancerous stage for the reason that the physician has not been allowed to examine the breast at intervals in its age of functional decline and the patient has not yet accidentally discovered the condition.

Each breast is made up of fifteen to twenty-four lobes separated from each other by varying amount of fat and connective tissue. Each lobe consists of several lobules and these lobules are formed by a large number of acini which are composed of a single layer of epithelium supported by connective tissue largely supplied with blood vessels, lymphatics and nerves. Every lobule is provided with a small duct and, meeting others, unites to form larger canals for each lobe and each empties separately into small openings in the nipple. The acini are lined with cubical epithelium but the terminal ducts near the nipple are lined with stratified pavement epithelium. In its development, it is a modified sebaceous gland.

The mammary structures are derived from the basal layer of the epidermis, beginning as finger like growths from the skin, extending in various directions between the layers of fascia. It is thus seen that the mammary gland has no true capsule only the above superficial fascia involving and supporting the glandular structure. At times, glandular structure accompanies these fascia fibers to the skin. These fibers leading from the skin to the glandular structure are named ligaments of Cooper and their shortening in cancerous involvement produces a dimpling of the skin.

While a working knowledge of the arterial and nerve supply

*Read before the Iowa State Medical Society, Des Moines, 1913.

and venous drain of the mammae is necessary, yet it is only of anatomical importance but it is imperative from a surgical and pathological view that our knowledge of the lymphatic vessels and lymph nodes of the mammary glands and of the chest should be exhaustive and complete.

The breast is exceedingly well supplied with lymphatics which are arranged in a deep set around the lobules and ducts and a superficial set which unite and form a plexus around the nipple. They drain mainly into the axillary lymph nodes along the edge of the pectoralis major but also communicate to a lesser degree with nodes around the subclavian artery and those in the anterior mediastinum following the internal mammary artery.

Handley, of London, in his explanation of the involvement of the liver, claims that the lymphatics of the inner, and especially of the lower, quadrant of the breast "often drain into the liver by way of the deep fascia, the linea-alba and round ligament".

It must be remembered that some of the lymphatics of the breast anastomose with those of the surrounding and adjacent structures. Some of the lymphatics of the shoulder and back drain into the axillary nodes; also some of the lower cervical nodes receive lymphatics from the axilla and from the skin over the breast. Cross anastomosis of the lymphatics to the opposite breast accounts for the involvement of one breast from the other in about ten to twelve per cent in late cases. The lymphatic nodes, into which the lymphatic vessels of the breast and chest drain, are the pectoral nodes situated along the edge of the pectoralis major muscle, the scapular nodes along the anterior edge of the scapula, the humoral nodes along the axillary artery, the infraclavicular nodes at the edge of the pectoralis minor muscle and the supraclavicular nodes above the clavicle at the junction of the subclavian and external jugular veins. The axillary nodes are nearly continuous and communicate with the infraclavicular and supraclavicular nodes.

Male Breast.

The various types of carcinoma and sarcoma of the female breast find their prototype in the male breast. Their diagnosis and treatment are less difficult owing to the rudimentary development of the glands.

The average age of carcinoma in the male breast is fifty-five years, the youngest twelve years and the oldest ninety-one years, also a longer time is necessary for its growth compared with the female breast. Due to the atrophic gland and the absence of fat, the nipple retraction and involvement of the underlying structures are distinguishing features. Histologically, the growth begins in the ducts of the gland because of the lack of development of the acini. Sarcoma is a very rare occurrence in the male breast.

Sarcoma.

In Bloodgood's analysis of six hundred and ninety-four mam-

mary tumors of the John Hopkins' hospital records, one and one-half per cent were sarcomas. In analysis of five thousand cases of mammary tumors of the German records, two and seven tenths per cent were sarcomas. Sarcoma is rare in the breast compared to other parts of the body. All varieties of sarcoma are found in the breast, spindle, round and giant cell, their relative frequency usually occurring in the order named. Sarcomas more frequently involve the breast during its greatest functional activity. The average age is about thirty-five years. It is very rare in young women and in those over fifty years old. The etiology of breast sarcomas is practically unknown. A single injury of superlative degree has been found to be a causative agent in some cases. However, this may have been only an incident and not a true cause. Sarcoma in the breast, as elsewhere, invariably originates in the connective tissue. Microscopic examination often shows different types of cells in different parts of a tumor making it difficult to classify them in many cases.

The diagnosis of sarcomas rests largely on the fact that the different shaped cells are separated by an intercellular substance, often very small in amount, histologically resembling normal embryonic tissue,—from the soft rapidly growing round cell sarcoma resembling granulation tissue to the hard tumor or slow growth sarcoma resembling fibrous tissue or bone or cartilage. Clinically, sarcoma usually occur as a single tumor in the inner quadrants and very rarely effect both breasts simultaneously. The relative malignancy depends on the rapidity of the growth. A sarcoma developing on a functioning breast grows very rapidly and its effects are deadly. Usually, sarcomas are encapsulated. The lymphatic vessels or nodes are not usually involved. The veins over-lying the tumor and affected breast are enlarged early. There is a rise of local and bodily heat (temperature). The skin immediately over the tumor is thin, stretched and freely moveable, but, in later stages, ulceration often occurs, due to pressure necrosis. The atrophy of the tissue accompanying the growth causes cysts to develop in about fifty per cent of cases and frequently hemorrhage taking place in these cysts produce a rapid enlargement of the tumor.

Sarcomas spread by following the adventitia of the blood vessels external to the capsule and by contact, but ordinarily they are disseminated by way of the blood stream.

Dr. L. S. Pilcher's definition of cancer (carcinoma) is as follows; "It is the lawless proliferation of pre-existing epithelial cells, in luxuriant, irregularly arranged masses that invade underlying and surrounding tissues, permeating, destroying them and finally themselves attaining a mass which can no longer be adequately nourished by an accessible blood supply, and which itself then follows into a central decay while at the periphery the process still goes on, that cancer exists."

As to the relative amount of fibrous or epithelial tissue existing

to compose the tumor mass, we classify the growth as hard and soft carcinoma or scirrhus and medullary carcinoma.

The blood supply of the medullary form is very abundant and the connective tissue very scanty as compared to the scirrhus form. The epithelial cells proliferate very rapidly making it exceedingly malignant. Fortunately, it is a rare form and found more often in early life, but, when it develops during pregnancy or lactation, it may terminate fatally in a short time.

Scirrhus is more frequently the form of acinous carcinoma. A single layer of epithelial cells lining the cavities of acini, and finer ducts, take on an atypical growth. These cells find their way into adjacent connective tissue and lymph spaces by passing through the basement membrane of the acini and ducts. We have a growth consisting of epithelial cells and fibrous tissue with blood and lymph vessels, the proliferation of the epithelia does not keep pace with the increase of connective tissue and a growth develops with the fibrous tissue predominating.

During the last few years, there has been considerable attention given to abnormal involvement of the breasts. Some have designated it chronic cystic mastitis. In the beginning, the change is one of hyperplasia but the process is a fibro-epithelial degeneration, a senile degeneration so far as the breasts are concerned.

Speese claims that from fifteen to twenty per cent of this form of mastitis is subject to malignant degeneration. It occurs in twenty-five per cent of all benign tumors of the breast and about seventy per cent of all malignant ones and is second only to carcinoma in its frequency.

Adeno-carcinoma structurally occupies a middle ground between scirrhus and medullary carcinoma and is of slow growth infrequently producing metastatic deposits.

Occasionally the mammary gland is subject to acute carcinoma. Volkmann has classified it as a carcinomatous mastitis. It begins seemingly as a general inflammation of the entire gland and at times both glands are invaded simultaneously. It is very rapid in its progress and invariably fatal in a few months. As it frequently begins on a lactating breast, its differential diagnosis from acute mastitis is very difficult and at times impossible clinically.

The larger percentage of cancers develop in the retrograde functional age of the mammary gland between the age of forty-five and fifty-five years, yet, to be on our guard, age can not influence us to any material extent in a diagnosis, it is only necessary to remember Rodman's compilation of a series of five thousand cases in which nine per cent were between twenty to thirty years of age, and five hundred and eighteen cases in St. Mary's Hospital in which forty-six cases were between twenty and thirty-five years of age.

Some authorities have attempted to give percentages of the hereditary influence of cancer but, owing to the difficulties encountered, they are without practical value.

Etiology of carcinoma, if known, would be very interesting for us to discuss today, and I might add, that, if it would materially aid us in the treatment or prophylaxis to consider the different theories advanced up to date, we should do so with profit.

It has been shown at the Mayo clinics with a great deal of accuracy that seventy per cent of the cancers of the stomach have developed upon previous ulcers of the stomach, other parallel examples could be given. In these cases, the epithelial cells are cut off from their normal location and are deprived of their proper nourishment and nerve supply, and, while some of them may die, others in their partial segregation proliferate and invade surrounding tissues and develop into cancer. Premature age or lessened vitality of the epithelial cell wherever located, from any cause, either local or general, seems clearly proven to be one of the etiological factors of cancer.

The symptoms and signs of cancer of the breast are too familiar to all for me to take them up in an exhaustive manner.

In our examination of the breasts, the entire thorax should be bared and we can thus compare the two sides of the chest including the breasts, axillary spaces and supraclavicular regions. The flat of the hand pressed firmly against the breast will detect any abnormality of the gland far more accurately than manipulation with the finger tips.

The detection of the shortening of the ligaments of Cooper by dimpling of the skin, by inspection, or giving a pulling sensation to the palm of the hand when a wide excursion of the gland is made on the chest wall, is, according to Halstead, quite pathognomonic of cancer and occurs in a very large percentage of cases.

The absence of pain perhaps is the one symptom that has caused more delay on the part of the patient and physician in dealing with cancer of the breast than all others combined. There still seems to be a tendency for the laity and average physician to call all tumors of the breast still benign if pain is not present. Usually pain is not present in the earlier stages and, when present, means adhesions, ulcerations or an advanced stage.

Retraction of the nipple occurs in about one-half of all cases and is only present in the earlier stages when the beginning of the cancer is either at or near the nipple, but, when present, is a valuable sign.

Fixation of the tumor to the skin or underlying fascia or muscle or chest wall is very suggestive of malignancy and often shows an advanced stage of the cancerous growth.

Enlarged lymph nodes are invariably present unless the growth is within a few months of its appearance. Often, when clinical examination reveals no enlarged glands, they are found to be quite extensively involved at time of the operation.

Cachexia usually means extensive local, if not systemic involvement.

At times the differential diagnosis is so difficult that even the skilled surgeon may not make a diagnosis in fifteen per cent of cases.

The Commission on Cancer of the Medical Society of Pennsylvania states that the average time elapsing before the person affected with cancer reports to the physician is one year and a like period intervenes before the surgeon is consulted. The precancerous stage has passed and delayed surgery can not reach the goal.

That the spread of cancer occurs by way of the lymphatics almost wholly needs but little emphasis. There is no direct evidence that cancer metastasis occurs by way of the blood vessels. Goldman and Schmidt have found, when cancer cells find their way into the blood stream, a thrombosis occurs in its organization, the cancer cells are destroyed or so attenuated that they are no longer malignant. However, clinically, it seems reasonable to believe that in late cases, especially when ulceration occurs, the blood stream may cause metastasis.

Cancer cells migrate almost as freely against as with the normal lymph stream.

Handley, with others, contends that cancer spreads by direct and continuous centrifugal extension along the lymphatics by a process he calls "permeation". The cancer cells have a great tendency to spread along the lymphatics along the fascial planes before involving the underlying tissues or organs. This is certainly of great importance to the surgeon.

Bone metastasis in the early stages frequently does not produce any local symptoms and must be determined by the x-ray.

Volkmann's law, established more than twenty-five years ago, that patients who passed three years without having any local or general evidence of a recurrence could be pronounced cured, is not accepted by surgeons at this time.

Investigation has established the fact that twenty per cent, after having passed the three year limit, succumb to the disease later, and, after the five year limit, less than ten per cent suffer recurrence.

Coley's and Ransohoff's statistics demonstrate that recurrences generally occur during the first year, occasionally in the second and infrequently in the third. There seems to be no time limit in a small per cent of cases in literature when cancer recurs in the same individual.

But, are these cases which go fifteen, twenty and twenty-five years really recurrences? Until the pathologist tells us what causes cancer, it can not be answered. However, there seems to be no good reason why an individual having cancer of the breast ten or twenty years previously could not have a cancer developing on a lacerated cervix, in the scar tissue of the breast or on the site of an old gastric ulcer, for the individual may have a susceptibility to cancer, and especially when it occurs in parts where there is no direct connection

of the lymphatics with the breast, or when the secondary growth differs materially histologically from the primary growth.

The average cure of patients after passing the third year limit, in the hands of surgeons who do the radical operation upon all classes of cases, is about thirty per cent. A forty per cent cure with this time limit is exceptional and at times has the suspicion of selection of cases.

As a large percentage of recurrences occur locally and within the first year, the surgeon should exercise extreme care in preventing the spread of cancer cells during time of the operation. The use of the actual cautery following the surgeons attempt to obtain tissue for section, should always be employed as it reduces this danger to a minimum.

Most of the surgeons of today believe, that, if we can get the disease when the breast is only involved and within the first six months of the appearance of the tumor, we should give nearly seventy-five or eighty per cent cures, but, when the lymph nodes in the axilla are involved, only twenty to twenty-five per cent of cures are obtained.

In Greenough, Simmons and Berry's report covering a period of ten years, 1894 to 1904, at the Massachusetts General Hospital, disclose one of the most interesting facts, namely; that early incomplete operations yield better results than the most radical operation in the well advanced cases. These facts demonstrate that cancer is a local disease in the beginning, but, when more glands and tissues are involved as time goes on and the growth progresses, the surgeon has a more difficult and often impossible task in removing all diseased and invaded tissue, and his end results will fluctuate accordingly.

While there may be treatments of merit other than surgical for cancer of the breast, we can not recognize them at this time to be sufficiently developed or proven to give them a practical standing or more than respectful notice with the hope that soon one of these faithful investigators will give us a cure where surgery has only partially succeeded.

We should become familiar with the reasons and proofs actuating different surgeons who are leaders in this field in modifying their technic of operation a little each year and, when we operate, apply the knowledge to the existing pathological conditions.

The basic (or fundamental) principle the surgeon should have in mind in all cases, in addition to the removal of the breast affected, is the thorough removal of all probable involved lymph nodes with their accompanying fascia and adipose tissue enmasse also the probable involved superficial and deep fascias.

The dissection should begin above the axillary structures including the pectoral fascia and usually all or a part of the pectoral muscles. The aponeurosis of the large muscles of the back near the ax-

illa, as a matter of routine, should be explored and, if found involved, removed. Handley now removes the fascia of the sternal portion of the rectus and others that of the external oblique muscle, believing it greatly reduces the danger of internal metastasis by way of the round ligament and liver.

At the Mayo and many other clinics, the involvement of the supraclavicular glands is a contra-indication of a successful operation, while Pilcher and Rodman, admitting it adds greatly to the seriousness of the situation, always explore the triangle at the junction of the subclavian and external jugular veins and in a few cases regard the removal of these involved glands with their accompanying fascia and fat as the only barrier to an otherwise fatal termination.

The method of beginning the dissection at the lower angle of the incision and proceeding to the axilla, has nothing to commend it. If ulceration is present, the actual cautery is applied as the first step in the operation and in no way modifies the method of dissection.

The incision should be so placed that the resulting scar will not restrict the motion of the arm, also, if possible, the utilization of the outer skin flap or part of one of the chest or back muscles to cover the exposed axillary vessels and nerves. If the removal of the skin has been so extensive as to prevent the co-aptation of the flaps. Halsted uses the Thiersch graft immediately to cover the raw surface in preference to the slow healing by granulation. Having these facts in mind and dressing the arm at right angles to the body or beginning immediately passive and active motion of the arm and shoulder the evil functional results frequently following the radical operation, namely; limitation in motion, neuritis, lymph and venous stasis can be prevented.

The treatment of sarcomas of the breast is the same as that of carcinoma, an early diagnosis and the radical removal. Coley's serum has been advised as an after treatment by some with satisfactory results. It is well to give x-ray after treatments for a few weeks following the operation for both carcinoma and sarcoma.

It is the duty of all physicians to examine the breasts of their clientele at regular intervals to detect any abnormality early during its age of functional decline, and to advise the removal of all tumors of the breast for nearly sixty-five to seventy per cent are initially malignant and twenty-five per cent of all carcinomata of the human body occur in the breast. If it is benign, it is pathological at least, and about fifteen per cent become malignant if allowed to remain. Why consume so much time in observation and classification in our efforts to be conservative, when frequently the patient's only hope lays in the surgeon's expediency. The pathologist, with the frozen section, can work with the surgeon and the patient get the operation of choice and necessity at the opportune time.

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Discussion

Dr. C. F. Wahrer, Ft. Madison: What we don't know about cancer would fill the Congressional Library. The less you pretend to know about cancer the better you are off and the better off your patients are. We are told, as long as it is benign, let it alone. Do you know what that means? How long is it benign? How long is a rattle snake a garden snake? Just as soon as a pig becomes a hog. How will you decide that a given nodule of the breast is still benign? Are you going to put a little punch in there and take a little tissue? The essayist spoke the truth, when he said that sometimes the very best surgeon cannot tell whether the cells are malignant or not. The only thing I can see to do, is for the doctor to talk to a sensible patient, and say to him, you have a little nodule here; it is still loose and gives no symptoms, you may for a few months keep it under observation and if there is any change at all, I advise you to have it out. If you wait until you are sure carcinoma has set in, God help that patient. The best surgeon who ever lived cannot help her. You may dissect her up clean to the elbow and lay everything bare, and you must be a microscopic surgeon to get all the glands. Don't be so finicky about your diagnosis in cancer of the breast, because you can rarely ever make a clear diagnosis it is still early enough to help the patient, take no chances, have it out.

Dr. L. W. Littig, Davenport: I did not intend to say anything until I heard from my friend, Dr. Wahrer, whom I understand to say "when in doubt, wait two or three weeks or a month." I want to say, when you are in doubt, remove that tumor at once. I want to say another thing. If you have removed a tumor under suspicion, and you discover it is not malignant, tell the patient; do not let her go through life with the thought that you removed a cancer. Be honest with the patient.

Just a little report as to what occurred at Dr. Ochsner's clinic a few days ago, when a woman came in with a large cancer of the breast, which had spread in every conceivable direction. The case was inoperable. He made a few remarks on the wickedness of delay, and I said: "What do you do when you are called in consultation in a case of that kind? What do you say, to make the family feel that the doctor has done everything possible after he has recommended delay?" Dr. Ochsner said: "What do I say to the doctor? I tell him to go to the devil; I do not want to have anything to do with that kind of a man—wait for cool weather to operate in cancer of the breast!"

So, I say, when you are in doubt as to the value of a tumor of the breast, remove it at once, today. When sure that the tumor is benign, remove it anyway, even such a tumor may become malignant, and always worries the patient.

Dr. W. L. Downing, Moulton, Iowa: It seems to me, Dr. Littig does not go far enough when he says if a tumor is suspicious. When I first began the practice of medicine at the cross-roads—and I am still there—the writers told us to wait until the tumor looked suspicious. In the last ten years they do not say that. They say that all tumors of the female breast should be removed at once without waiting for them to be-

come suspicious; that all tumors of the female breast will become cancerous sooner or later, if only you let them alone long enough.

I enjoyed the doctor's paper very much. He said we did not know the cause. A year ago, when Dr. Charles Mayo was doing some operations for cancer, I asked him what he thought was the cause of cancer. He said: "Any long continued irritation." I am not sure, but that every doctor present would perhaps have given the same answer.

Dr. A. L. Yocom, Jr., Chariton: I want to add a little as to the importance of the x-ray treatment. Three years ago I removed a breast for carcinoma. I x-rayed the chest and axillary space twice a week as long as the patient would safely stand it, and then every two weeks and afterwards every month for about two years, when I stopped with the x-ray. About six months after I stopped, there appeared a lymphatic gland in the axillary space and a little ulcer in the scar, and I started again with the x-ray twice a week. In three treatments the lymphatic gland was gone, and in about two months the ulcer had healed. It has now been four or five months with no recurrence that can be noticed, but I am still using the treatment and will continue so to do. I think, in the dangerous, far-gone cases, that is the only hope after the operation has been done correctly, to prevent recurrence.

I think that the method of Dr. Murphy of Chicago, of removing the fascia of the muscles from the chest, transposing them and covering the axilla, which prevents the constriction of the veins and nerves and resulting complications, is a good method.

Dr. W. W. Bowen, Fort Dodge: One phase of the subject has not been touched upon at all, and that is as to operations on these advanced cases. I believe the majority of cases that are advanced at all, are harmed wonderfully by any operation at all. If there is any involvement above the superclavicle region, practically none of them are benefited; practically all are damaged. If there is considerable involvement in the axilla, in all probability, all but one out of a hundred will have a recurrence. You may make that patient live a little longer by removing the glands in the axilla and clavicle region and all that, but the suffering will be worse than before, because a whole lot of these cases are followed by edema in the arm, and there will be pain and suffering as long as the patient lives. If I had a friend or dear relative who had any considerable involvement of cancer of the axillary glands from carcinoma of the breast, I wouldn't have her operated upon.

Dr. C. M. Swale, Mason City: It is the custom at the Mayo Clinic to explore the triangle above the clavicle and, if they find the glands involved by frozen section, they do not proceed any further as they do not deem it possible to eradicate the diseases when it has advanced so far.

Pilcher & Rodman invariably explore the triangle above the clavicle and remove the involved glands claiming the end results justify them in this procedure, a certain per cent entirely recovering, while, otherwise, it would go on to a fatal termination.

Halsted makes a big, clean sweep of the skin, resorting to Thirch's graft to cover the defect.

Murphy says often too much skin is removed by the surgeon; also, that you can frequently use a part of the pectoralis major to fill in the axillary space and cover the exposed vessels and nerves, as it is the muscle fascia and not the muscle itself where secondary growths occur.

Halsted says that it is not safe to use the muscle to cover the axillary space as there is great danger from secondary growths. Bryant, of London, in forty years experience never saw a secondary growth in muscles of the chest, and Murphy has had a similar experience.

UNILATERAL TUBERCULOSIS OF THE KIDNEY*

E. A. JENKINSON, M. D., Sioux City.

We, as medical men are more particularly interested in unilateral tuberculosis of the kidney than in bilateral renal tuberculosis as the bilateral cases are hopeless. Fortunately tuberculosis of the kidney begins as a unilateral infection in about 90 per cent of the cases. But in these 90 per cent the danger is constantly present of involvement of the remaining kidney. An early diagnosis is of utmost importance because in the early months of the disease the removal of the diseased kidney has a very low immediate mortality (2 per cent) and at this time the chance of a cure is the very best.

In the unilateral variety of tuberculosis of the kidney, the infection is always hematogenous. The location and extent of the infection is dependent upon the size and distribution of the vessel in which the infected embolus or emboli are lodged. It may be confined to one pole in a small focus, or be disseminated throughout the entire kidney, (in the miliary form the other kidney is generally involved.) The course is that of tuberculosis in other situations:—viz. the coalescence of miliary tubercles, infiltration, necrosis, formation of cavities lined by typical walls of granulation tissue, and containing cheesy material or tuberculous pus, with final rupture into the calices and pelvis, with consequent infection of the pelvis, ureter, and later the bladder.

At any time a new infection may be engrafted, and when happening may make the original infection hard to determine. It is particularly these mixed infection cases that perforate the capsule forming perirenal abscesses. A pure perirenal tuberculous infection is infrequent but may occur by way of the lymphatics; tuberculous urinephrosis may occur due to plugging of the ureter by debris or stricture; and, if complicated by pus organisms result in a tuberculous pyonephrosis.

Infection of the ureter is followed by ulceration of the mucus membrane, extending into the muscular coat or by diffuse infiltration of the walls, cause thickening and rigidity, with a tendency to narrow the caliber and form stricture, above which dilatation may take place.

Very early in the disease the tubercle bacilli are liberated in numbers and these passing with the urine into the bladder, cause cystitis with the formation of ulcers in the mucus membrane of the bladder.

There is one prominent symptom calling attention to renal tuberculosis; viz;—bladder irritation, and no one is justified in treat-

*Read before the Sioux Valley Medical Association, Jan. 22, 1914,

ing locally a persisting case of bladder irritability until all means have been exhausted to exclude renal tuberculosis.

While primary tuberculosis of the bladder is a possibility; for practical purposes, its existence may be disregarded. The relative frequency of primary involvement of different portions of the genito-urinary tract, according to Walker in 279 cases were: the kidney-184, epididymus-80, prostate-6, fallopian tube-6, seminal vesicles-2 and uterus-1. When these structures other than the kidneys are involved, we must be able to show that they are not secondary to a primary renal tuberculosis. Unfortunately there is no other surgical condition of the kidney in which there are so few symptoms referable to the kidney itself as is the case in tuberculosis of this organ.

Symptoms referable to the bladder. First: frequency of urination and polyuria are the most constant. The amount of pain and frequency of urination bear no constant relation to the extent or depth of involvement of the bladder walls, as a very superficial involvement of the trigone is apt to cause intense symptoms, or the symptoms may be due to the irritating effects of the bacilli alone in early cases before infection of the bladder actually occurs. Polyuria is one of the constant early symptoms, it is suggestive only in as much as any irritative lesion of the kidney and its pelvis may be attended by this symptom. Marked diminution of the urine would suggest a bilateral infection.

Pyuria: in the early stages pus may be found only in small quantities, especially when the disease is limited to the parenchyma. But when the disease breaks into the pelvis, large amounts may be found. The urine may be clear at times due to plugging of the ureter, in the case of closed pyo- or hydronephroses.

Blood is nearly always found in small quantities (microscopically) rarely in quantities sufficient to be seen by the naked eye. A severe hematuria however, may be one of the first symptoms of the disease, and is the initial symptom in about 6 per cent of the cases (Braasch). Casts are found in the majority of cases. The bacillus of tuberculosis is found in about 80 per cent of cases by collecting 24 hour specimens and staining the centrifuged sediment. In early tuberculosis pain in the kidney or along the ureter is the exception and when found, usually indicates a blocking of the ureter, or in cases of marked hematuria, there may be typical attacks of renal colic. In some cases pain may be caused by marked congestion of the kidney due to its invasion by pyogenic organism, but later in the disease, discomfort, either a dull pain, a feeling of pressure or fullness and tenderness is the rule. Practically all cases suffer from bladder irritation of more or less intensity.

General health: a certain proportion of cases suffer from evening rise of temperature, preceeded by chilly feelings and often followed by cold sweats, at other times the fever is intermittent.

Fever is higher and more constant in cases having both renal and bladder tuberculosis, due to absorption through the bladder ulcers. Anemia is regularly developed in the course of the disease. Digestive disturbances, loss of appetite and indigestion are common. Sometimes there is diarrhea with emaciation, lassitude and muscular weakness.

It is well to remember that renal tuberculosis may be found existing and due to the lessened resistance caused by stone in the kidney, movable kidney, essential hematuria of the kidney, renal tumors and congenital malformations and less directly by chronic posterior urethritis, prostatic hypertrophy, etc. Our attention is usually called to the case by a cystitis that has failed to yield to the ordinary methods of treatment and in which there is a progressive loss of flesh and strength.

Urinary examination reveals pus in either small, moderate, or large quantities, except in those cases in which the ureter may be temporarily closed. The urine is acid as a rule, blood is found in the majority of cases. A microscopical examination, attempting to find tubercle bacilli (which should be found in at least 80 per cent of cases,) should be made and with this examination, a general examination to rule out syphilitic sequelae, especially tabes. The most important, and as a rule, final findings are made by the direct examinations of the bladder with the cystoscope.

A word about tuberculosis of the bladder at this time. Primary tuberculosis of the bladder is very rare. In a series of 205 cases of chronic genito-urinary tuberculosis, the bladder was alone involved in but one case. The most frequent source of infection is the kidney, next following primary involvement of the epididymis extending via the vas deferens, seminal vesicles and prostatic urethra. Sometimes the disease may originate in the seminal vesicles or prostate, from there invading the bladder.

The bladder is very resistant to tuberculous infection, sometimes resisting for years a tuberculous infection of the kidney. Gonorrhea predisposed to its infection as do tight strictures and stone.

The trigone, ureteral orifices, and border of the urinary meatus, together with the prostatic urethra are the parts first affected in the majority of cases; the tubercles are usually grouped and soon coalesce, forming a small area of infiltration, which projects slightly from the surface. Ulceration follows which invades the bladder wall, destroying areas of the mucosa and sub mucosa, later the musculature may be eroded or even perforated. The ulcers may be single or multiple and are usually irregular in shape with undermined borders, the base covered with a pale pink or grayish granulation tissue. In the advanced cases ragged fragments of muscle tissue may be seen in the base, or the tuberculous granulations may sprout out, forming papillomatous projecting masses (resembling malignant papillomata) and may hide the urethral openings.

The straining due to irritation, first causes hypertrophy of the muscular coat, but later with greater involvement and infiltration, there results replacement fibrosis and loss of contractile power, atrophy of the muscular coats and the bladder becomes thickened and contracted. This condition may continue until the bladder is capable of holding but an ounce or two. Pain, frequency of urination and straining are most marked, some cases are recorded in which the coats of the bladder are destroyed without the usual contraction, leaving a noncontractile flaccid bag, lined by a tuberculous membrane.

From what has been said of tuberculosis of the bladder it is easy to see some of the difficulties met with in cystoscopic examination, when attempts are made to catheterize the ureters or determine definitely the kidney at fault, or that there is not a bilateral infection.

First: the papillomatous proliferations may be mistaken for malignancy or they may hide the uretral orifices, and a specimen of the growth may have to be removed through the cystoscope to determine its identity.

Second: the uretral orifice on the normal side may appear more diseased than that of the diseased side.

Third: the irritation produced by the cystoscope may cause such contraction, that the urinary flow from the ureters are stopped for a time and pus and blood may obscure the field of vision.

Obstruction to the uretral catheter is quite frequent on the diseased side, due to contraction following ureteral ulceration. On the normal side it may be found usually at the meatus (intramural) due to marked inflammation or ulceration causing cicatricial changes.

Urine catheterized from the well side may be contaminated by pus and possibly tubercle bacilli scraped from the bladder mucosa, in introducing the ureteral catheter, this error might lead to the mistaken diagnosis of bilateral infection.

These are the occasional difficulties met with in the advanced cases. As a rule, the cystoscope clears up the diagnosis in a satisfactory manner.

The ureteral openings may be seen and the diseased side recognized, often the pus being observed exuding from the diseased side. The ureters may be catheterized and the separate specimens examined for tubercle bacilli. In this way it is possible to determine that there is a functioning kidney to do the work after the removal of its diseased mate. At times the injection of indigo carmine will aid in finding the ureters and also aid in determining the relative function of the kidney.

The diagnosis of renal tuberculous is made usually after attention has been called to symptoms referable to the bladder. Frequency of urination, hematuria, polyuria or pain, which do not yield

to the ordinary methods of treatment. This condition calls for a urinary examination. If the urine reveals blood or pus, attempts should be made to demonstrate the tubercle bacillus. If the tubercle bacillus is found, or if even suspected, a cystoscopic examination should follow. The object being to locate the source of trouble, whether the bladder alone is infected or one or both kidneys. In a great many cases the cystoscopic picture is typical. The ureteral opening on the affected side showing characteristic changes, and cloudy urine or pus may be seen coming through them. Indigo carmine is an aid in the determination of the diseased kidney, due to the fact that following an intravenous injection of indigo carmine, in five to ten minutes there will be observed through the cystoscope dark blue urine from the healthy side while that from the diseased side is a pale blue and does not appear until some little time later, and besides is often seen to be mixed with pus and cheesy material. Phenolsulphonephthalein may be used instead of indigo carmine. I believe it to be good practice to catheterize the ureters if possible, as the knowledge thus obtained, surely offsets any possible danger of infection caused by the introduction of the ureteral catheter.

A general examination should be made and other foci of infection, viz: lungs, glands, etc. noted.

An enlarged kidney, if found, does not always indicate that it is diseased as it may be the healthy kidney with a compensatory hypertrophy. A search should be made for nodules in the epididymus, prostate and seminal vesicles. An attempt may be made to palpate a thickened ureter through the vagina or rectum. The treatment is medical and surgical. The medical cases however, are confined to the two extremes, viz: to cases in their incipency in which a positive diagnosis cannot be made, and where the patient should be kept under observation. It is well to remember that the kidney secretes tubercle bacilli and these may be found without any genito-urinary lesion, the other extreme is represented by the bilateral renal infections, and in patients having other marked contra-indications to operative interference, viz: advanced tuberculosis of lung, peritoneum or genitalia, kidney insufficiency and other serious diseases. The treatment is hygienic and dietetic with the addition of tuberculin.

Surgical treatment is indicated in the 'unilateral variety and means the removal of the kidney.

The operative method is that usual in other diseases of the kidney which demand extirpation, care being taken not to rupture the organ during its removal if possible. The treatment of the ureter is of no special consequence, as the results are about the same, whether the ureter is completely or partially removed, left long and stitched into the wound, or injected with 20 to 30 m. of pure carbolic acid, this later method is probably preferable as it can be done quickly.

Post operative treatment is of considerable importance even when the kidney is removed, there is always left a certain amount of infection either in the ureter, bladder, or both and these patients should have the benefit of the medical man's knowledge of hygiene, dietetics, etc. They should be kept under observation for at least one year.

OSTEOMYELITIS*

SMITH A. SPILMAN, M. D., Ottumwa.

I shall not attempt in this short paper, to treat exhaustively the subject under consideration, but to touch upon some of the most important points, and to bring to mind the great responsibility resting upon every practicing physician. It must of necessity be the lot of everyone to meet cases of this protean disease and its early recognition very frequently means the saving of the patient from permanent disability and even maiming of the victim.

While all know theoretically how to differentiate from other ailments, it seems to be necessary to repeat and repeat and to accentuate the importance of proper diagnosis as well as treatment, but we forget and forgetting make the fatal mistake. It is too often found that a supposed rheumatic has caused delay that has resulted disastrously. The onset is usually sudden and the pain excruciating. Its location in one limb should cause immediate search for the local lesion. Sometimes it is thought to be only periosteal and an incision down to the bone may give relief and even eventuate a cure; but when the bone is reached, a careful search should be made for the possible exit of a small amount of pus and though it may not be found, a small opening in the bone will give drainage that may save a larger destruction of tissue.

It has been shown over and over again, that infection near a joint has been believed to be synovitis and treatment given accordingly, when had the bone been opened it never would have reached the joint. It seems to be rather a favorite point for infection in the tissues near the joint. Pressure over the bone will often elicit tenderness when no swelling can be detected or at most, very little swelling. As we should learn from all our cases and more especially from our unfortunate ones, I wish to relate some of my own experiences.

Case 1. V. B. a boy about 10 years of age had a slight bruise of left ankle. In two days, it was very much swollen and very painful, and his physician, a competent man, was called. He saw the danger and called counsel, and a free incision was made down to the bone. All the care possible was used, but the infection was very virulent and it was found necessary to make numerous openings, and insert drainage. The constitutional symptoms became so severe,

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that five or six weeks after the first onset, he was brought to the hospital, and the limb was freely incised, showing a great destruction of bone. About one half the tibia was removed, leaving the periosteum when his condition became so grave, that further operation was suspended and he was removed to bed. After a few days, the operation was resumed and the remaining bone which was saturated with pus was removed. The cavity or rather the remaining periosteal casing was mopped out with carbolic acid and then with alcohol and washed out iodoform gauze strips placed with proper tubes for drainage. The epiphyses were not removed though they were injured. A gradual recovery took place with reformation of bone and development under proper braces has given a useful, though deformed leg. It will be much shortened but is much better than an artificial limb.

Case 2. D. C. female child of two years. Was said to have just had scarlet fever. The left arm at elbow was greatly swollen and very painful. Pus was plainly present around the joint. Free incision with evacuation of large amount of pus and through and through drainage, was soon followed by a decline of fever, the return of appetite and apparently recovery. Some several months afterwards, inflammatory symptoms appeared and I was asked to see the case. Symptoms pointed to trouble in lower end of humerus and the bone was opened and drained and recovery seemed complete. Another year and the bone was opened again the infection seeming to have traveled upward. This was followed by complete health for two years, when the trouble seemed to involve the bone of the forearm. It was found the elbow joint was invaded and the humerus, radius and ulna were in bad condition. Free openings were made and free drainage was established but the general physical condition seemed so bad, that further effort was not made at this time. About two weeks later, the little patient was placed upon the table, with the expectation of amputating at the shoulder joint. But remembering the wonderful powers of regeneration of bone in the child, and with a dread of the mutilation which would result from amputation, we decided to carry out the following procedure. The humerus was removed including its head, all these structures being saturated with pus. The radius and ulna were treated in the same way. The periosteum being retained so far as possible and with as little mutilation as possible. The wound was mopped out with 95 per cent carbolic acid followed with alcohol. The periosteum stitched together over a strip of washed out iodoform gauze, drainage tubes inserted, and the limb placed in splints. Fever and pain subsided and appearance of health was soon apparent. This was done less than a year ago. At this time, the bone of forearm and arm are quite firm, and the hand is quite useful and strong. Of course the epiphyses being gone the arm will always be short and it will be useless for many functions but the hand is far superior to any artificial

member. These are perhaps extreme cases and of course deplorable, but show that much can be done even in desperate cases, that may count for much to the patient.

Fortunately many neglected cases result in a chronic condition in which a fenestrum may form, such cases are not usually so difficult to handle. They may indeed be treated successfully before they have reached such a stage. I recently saw a case that had had a rather slight bruise over the tibia which was followed by suppuration, incision and drainage. It was hoped this would cure the periostitis, but the trouble progressed and in about two months, the bone was opened and a large mass of diseased bone removed.

These cases are probably streptococcic infection. We should not forget that we frequently have to deal with tubercular or syphilitic infections. But in all cases proper and careful drainage is important. Let it then be remembered that these bone cases are very grave and if one is in doubt an early consultation should be suggested. Delays are dangerous, and early operation may save the limb or even the life of the patient.

Discussion.

Dr. A. L. Wright, Carroll: I can say only a word, and that is with respect to the importance of an early diagnosis. We all seem to be united upon the importance of recognizing the pathology early. When the clinical history has been portrayed, the disease recognized, surgical interference is the only method. These cases are altogether too frequent, and often a great deal of damage is done before relief is given. The pus as a rule is allowed to escape early and will give relief to the patient, and he is very fortunate when relief has been given.

A member: I must commend this most excellent paper and the insistence of the author upon an early diagnosis. The pain is intense, acute, burning and penetrating, as well as there being a tenderness of the structure immediately above that point. I think, if we pay particular attention to these cases, we will be able to recognize readily what we have to contend with, and that surgical means is the only remedy for this condition.

Dr. C. F. Wahrer, Ft. Madison: I think this paper is entirely too important to be passed over without discussion. As Dr. Spilman, says, we have many of these cases coming under our observation with a mistaken diagnosis, usually rheumatism. There are enough symptoms, when we know the pathological process, usually present, that a diagnosis ought surely to be made. We know, in the process of infection, if we get infection, in the medulla, death of tissue would take place within two or three days. In these cases the more compact part of the bone will become perforated, and you will have an abscess in the soft tissues. Where we have that condition we have a uniform circular contraction of the extremity. This fact alone should excite suspicion that you have a case of osteomyelitis,—rapid destruction of the bone. This disease occurring in infancy, may be such as to invalidate the functions of that extremity. Hence, the more early attention given to these cases, and proper surgical intervention, will not alone save an amount of suffering and life, but will save the usefulness of that extremity.

FAT-CONSTIPATION IN THE ARTIFICIALLY FED INFANT*

S. G. HANDS, M. D., Davenport.

In choosing the above rather common-place subject, the writer offers no apology, having had only two objects in view:—namely, to prepare a paper which should be of interest to those practicing general medicine; and, to review the literature for material which would throw light upon a subject, in which he, at least, needed information. Nor is this strictly a personal affair. Any mention of matters pertaining to the artificial feeding of infants is likely to provoke a feeling of ennui, which fact is to be deplored, as undoubtedly there are those present with this attitude who need to know what is contained within the essay.

In going through the records of the meetings of the various societies, the fact is very evident that many of the essayists strive to choose the most technical and ultra-scientific topics for their papers; subjects that are comparatively new, and the literature of which is not overabundant. The result is that the essay is as extensive as the references and the imagination of the author will permit, and the discussion, which is the real life of any paper, is practically nil, or possibly confined to what had better be termed the more respectable name of platitudes. Hence the choice of the above as a subject.

It is hardly to be expected that those whose scientific efforts are confined to special branches will be interested in what follows. But while we are in pursuit of the many extremely scientific will-o'-the-wisps which apparently guide us to the end of the rainbow, where lies a medical Utopia, let us not overlook the fact that there are babies to be fed and fed in a scientific manner. It is with those infants who have not been fed properly, with whom we are concerned in the present writing. As fat-constipation is a condition not commonly found in the breast fed infant, it will be understood that in this discussion, the condition deals with those cases, in which the infant has been fed artificially according to the various methods of modifying cows' milk.

Fat-constipation is characterized by constipation, stationary or gradually diminishing weight, ammoniacal urine, waxy complexion and more or less severe nervous phenomena.

The condition is due chiefly to the fact that the fat content of the food, is above that tolerated by the digestive apparatus of the individual. It is really an acidosis, caused by the withdrawal of alkalies, from whatever sources obtainable, for the purposes of neutralizing and saponifying the excess of fatty acids and fats taken in as part of the food. Too high a fat content is the chief cause, with overfeeding and too short intervals between feedings secondary.

*Read before the Scott County Medical Society, Davenport, Nov., 1913.

The history of the case usually reveals the fact that previous to the time the trouble was noted, the infant had been normal, or more often, had grown wonderfully well, and it might have been a source of no small amount of satisfaction to the parents that the child's weight was considerably in excess of that of other babies of a similar age.

The first thing noted out of the ordinary, was a marked constipation, the medical treatment of which was of no permanent value. Mechanical aids only were sufficient to produce an evacuation. The stool was hard, dried out and putty-like and very light colored, due to a modification of biliary pigments. The odor is usually markedly offensive. Blood might have been present, the result of erosion of the mucous membrane of the rectum. Possibly there was a quantity of greenish mucus present, with gas as a disagreeable and distressing accompaniment. This character of stool may be alternated with an occasional semi-solid evacuation, composed largely of mucus and undigested fat particles, which in the past, have been designated as undigested milk curds. This classification is entirely erroneous, as they are dissolved in alcohol (95 per cent) and ether. The presence of such particles of undigested fat particles should serve as a signal to modify the fat content of the food.

The changes in weight are characteristic and are practically always present. At first the weight may be normal, or even in some cases, subnormal, according to the scale of average weights. Then there begins a marked increase, and instead of the desirable one pound per month being added to the infants weight, there is an increase of two and even three pounds per month, and in the course of a few months the weight of the individual is greatly in excess of the normal weight curve. But it is a safe rule to keep in mind that every time that the weight increase is in excess of one pound to one and one fourth pounds per month, there is sure to be a reaction.

In spite of the infant being fat and robust looking, there is a marked pallor to the skin, and a loss of expression to the countenance, so that a short distance away the face takes on the appearance of a wax figure. The pallor is not the result of anemia so much as internal congestion.

The urine is strongly ammoniacal, due to decomposition of proteins in the digestive tract. Indicanuria is a fairly constant symptom, a symptom of the result, and not as has been believed, of the cause of the subject under discussion. The caustic action of the offensive urine, together with the general effect of toxins absorbed from the digestive tract, upon the nervous system, unite to make the child restless, peevish and cross, so that loss of sleep is added to aggravate the general conditions.

If the above symptoms are kept in mind, the diagnosis is easy in uncomplicated cases. If the condition is not recognized, it pro-

gressses to intestinal indigestion, decomposition and the terminal condition of intoxication or ileo-colitis.

There is a very nearly constant ratio between the protein and fat in cows' milk. The fat content has been overlooked to some extent in casting about for cause of faulty development in the artificially fed infant. A certain amount of fat is absolutely essential. But the tendency in using cows' milk as a basis for feeding infants is to arrange the various amounts of cream, milk, carbo-hydrates, water, etc., without any sort of a check being made upon the per cent of butter fat in the cream.

An excess of fat may gain access to the infant's digestive apparatus in various ways, by overfeeding, either by allowing too great a quantity at each feeding, or by permitting too short an interval of time to elapse between feedings. The former may cause over-distention in addition.

Cows' milk is naturally acid and contains a larger amount of fatty acids than does human milk. Fatty acids are the last to pass the pylorus, requiring a longer time for the duodenal juices to neutralize this extra acidity. Therefore digestion is delayed and instead of the stomach being emptied in two hours or two and one half hours, or the regular interval between feedings according to the usual standard, three hours or more may be consumed before the stomach is ready to receive its next consignment of food. Where the intervals are short, the stomach contains milk constituents in all processes of indigestion and is never at complete rest.

It is absolutely essential that the stomach be emptied before fresh food is introduced, in order that the proper functions of the acid glands of the stomach be maintained as it is a well known physiological fact that with other actions of the gastric juice are included those of inhibition of bacterial activity and the stimulation of the biliary and pancreatic secretions. Hence, when digestion is curtailed by the free hydrochloric acid being used upon the residual food material instead of being taken up by that freshly ingested, bacterial growth is encouraged and intestinal digestion is impaired by lack of intestinal juices. This establishes a vicious circle because of the loss of that intimate relationship which exists between gastric and intestinal functions. All this is due to the fact that not enough time elapses between feedings, and is one of the things to be corrected.

If the pathological features of the condition are understood, the treatment is usually satisfactory. The immediate reduction of the fat content is of prime importance, and in addition is the modification of the habits of the individual. When the intervals between feedings are too short, they must be increased to four hours. This allows a complete emptying of the stomach, and a proper amount of gastric juice is available then when the next feeding time comes.

The amount of milk ingested must also be given proper consider-

ation. This is adjusted to the stomach capacity of the infant. Holt gives these capacities as follows:—

| | | |
|-------------|------------|-----|
| Birth | 1 to 1 1-2 | oz. |
| 3 mo. | 4 1-2 | oz. |
| 6 mo. | 6 | oz. |
| 1 yr. | 9 | oz. |

As fifteen or twenty minutes time is consumed in the act of nursing, a slightly larger amount than stomach capacity is given at each feeding, as the liquid part of the food passes through the pylorus in a very short time. So about one ounce to one and one half oz. is added to each feeding.

The formula is adjusted with the idea of maintaining the proper caloric value, so that there shall be no interference with the metabolic requirements of the individual. Forty caloric units per pound weight in the twenty-four hour period may be taken as the standard. The older the child, the less is the caloric requirement per pound weight. One ounce of whole milk, (4 per cent butter fat), to the pound weight of the infant, maintains the gross requirements. One half ounce per pound weight in the twenty-four amount, is added, to allow for the up-building of the tissues.

There is a fairly constant ratio between the protein and fat, and although larger amounts of proteid can be digested, the fats must be kept within proper limits. Any deficiency in the caloric value of the food, caused by reducing the fat, as is necessary in treating fat-constipation, must be made up by adding to the carbohydrate content.

Milk-sugar is the form of carbohydrate with which we are most familiar. This is capable of producing a great deal of harm in itself as a certain amount undergoes lactic acid fermentation in the intestine, especially where the amount of hydrochloric acid is modified as it is in fat-constipation. This gives rise to gaseous fermentation and distention, in themselves disagreeable complications. If milk-sugar is considered necessary, the amount contained in the milk naturally should be sufficient.

Maltose has been found to be the best form of carbohydrate to be used in preparing an artificial food for infants. It is combined with dextrose. A suitable and convenient combination is dextrimaltose, containing maltose, 51 per cent, and dextrin 47 per cent, to which sodium chloride 2 per cent is sometimes added. The latter is best omitted where there is an increased temperature in the infant. The compound is marketed with or without salt. It is wholly soluble, and has a caloric value of 120 units per ounce.

Contrary to the general belief, the infant digestive organs are able to assimilate quite definite quantities of starch as early as the third month. The starchy foods may be used until the stool becomes markedly acid in reaction. The amounts to be added to the food are 1 per cent for first month; 2 per cent for the second month; 3

per cent for the third month and from then on 4 per cent to 5 per cent.

Keeping the above in mind, it is not difficult to adjust the formula to meet the indications. Probably the safest way would be to treat each case as though it were severe, and to use skimmed milk as the basis for the formula. Of this, one and one-half ounces per pound weight, are used for the twenty-four hour amount. To this is added one-half ounce of dextrimaltose, (salt free if there is an increased temperature). Barley water is used as the diluent, the amount of which corresponds to the difference between the amount of milk and the total amount of food required by the individual, allowing for five feedings per day.

This formula is used for about two days, when one or two ounces of whole milk are substituted for a similar amount of skimmed milk. This plan may be carried out every second or third day, unless contraindicated by the presence of white or sandy particles in the stool, when the procedure is reversed. In severe cases the dextri-maltose had better be replaced with like amounts of malt extract, as the latter has been proven to act more rapidly upon the constipation.

Medical treatment is to be condemned. Possibly in some few cases, hydrate of magnesia may be added to an occasional feeding made according to the above formula, but the use of cathartics is to be depreciated.

To mention a hypothetical normal case, in order to illustrate the use of the caloric method of feeding, the formula may be adjusted to a six months old infant weighing sixteen pounds. The caloric requirement in such an infant is 640 caloric units for the twenty-four hour period, and in no case should 40 caloric units per pound weight be exceeded. The amount given at each feeding is seven ounces or one ounce in excess of the normal stomach at six months of age. The number of feedings (four hour intervals during day and one feeding at night) is five. This makes a total food amount of 35 ounces. The weight calls for milk (4 per cent) 24 ounces or 1 1-2 ounces per pound weight. The balance of the 35 ounces is made up by adding water. To this is added one ounce of dextri-maltose. The caloric value of milk is 21 unites per ounce, making a total caloric value of the milk in this instance of 624 units or 39 calories to the pound weight.

If this same child was suffering from fat-constipation the formula would read:—

| | | | |
|----------------------------|-----|-----|---------------|
| Milk, (skimmed) | 24 | oz. | 255 calories. |
| Barley water; (3%) | 11 | oz. | 50 calories. |
| Malt food | 1-2 | oz. | 60 calories. |

This makes a total caloric value of 365 units, while the infant requires but 325 to maintain metabolic equilibrium.

Fat-constipation in itself is not dangerous to life if recognized

early, before the more serious sequelae have had time to develop. The chief prophylactic measure to be remembered is the frequent testing of the milk for the butter fat content. This is absolutely necessary regardless of the particular method of feeding in use, as fat is the first constituent of milk to become intolerant in excessive amounts, to the infant economy. It is rather startling to what we have understood previously, but it is yet to be proved that the protein content of milk is concerned in nutritional diseases.

In addition to the frequent testing of the milk, other precautions to be observed are;—the amount of milk to be given at each feeding is to be adapted to the stomach capacity; and that sufficient time elapse between each feeding.

If these three vital principles are kept in mind, the problem of infant feeding will not be the indefinite and intricate mathematical problem it appears to the general practitioner, and mortality statistics among artificially fed infants are bound to greatly improve.

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ARTHRITIS DEFORMANS*

A. OSHANA, M. D., Mason City.

The history of the disease dates back thousands of years. At the time of Christ, and even a thousand years before, the Persians worshiped some of the elements, among them fire. They did not bury their dead but put them in the Tower of Silence with grates on top. The vultures would eat the flesh and the bones would drop to the bottom. When the tower was full, they would empty it all in a grave holding the bones of thousands of dead. By keeping the fire burning all the time, great mountains of wood ashes were made. Nowadays, the natives use these ashes as fertilizers. Now and then, they come to mammoth graves holding enormous numbers of bones. I had the pleasure to see some of them and examine the shape of their skulls and the condition of the bones. I found many ankylosed joints and shafts of bones denuded of cartilage. In all probability, this was caused by arthritis deformans. They are finding the same things in the Egyptian grave yards so that shows that the disease is as old as history.

Etiology. The causes of arthritis deformans, according to medi-

*Read before the Austin Flint-Cedar Valley Medical Society.

cal literature, are obscure. Nearly every one has his opinion about the etiology but we must ascertain the cause from the benefits of treatment. I will not go into a discussion of the theories of etiology which are known to you, but give you what I have found from long study and observation.

The causes of arthritis deformans in particular and rheumatism and gout in general are under-elimination. The victim is under-eliminated not only just before the disease starts but months and years before. I think no one can refute this statement. There are exciting causes, of course, as in gonorrheal infection, when arthritis effects many joints as the ankle, knee, shoulder and hip and advances to effect the tissues even producing ankylosis. It takes an expert to make a diagnosis in some of these cases. A good many times the diagnosis is impossible for there may be a mixed infection as some patients have arthritis deformans with gonorrheal joints also.

A person can be under-eliminated not only by the bowels being constipated, the kidneys not excreting sufficiently, the perspiration being checked, but in this age of machinery, when the machine is doing the work of man to the extent that he is not even taking a deep breath, he can be under-eliminated by shallow breathing as well.

Under-elimination causes auto-intoxication of the system; the nerves get stupified, they are awake yet sleeping, not awake enough to do their work properly. As a result the toxic material left in the system makes all normal work of the cells impossible. Urates are then deposited in the joints, the sheaths of muscles and covering of nerves, causing destruction of cartilages and the texture of the joints. The body needs just so much liquid in its economy. If under-eliminated, the metabolic action of the blood is retarded. The earth will not produce a crop without irrigation with rain or in some other way, but you have noticed that crops will not grow in a pond nor on the soil just surrounding it, only bull rushes and weeds thrive there. Ask a farmer why and he will tell you that the ground is too sour. It is the same with the human system,—it sours. Abnormal sediments poison the cellular textures and they can not functionate properly. This makes a beautiful field, not only for the rheumatic elements to grow on, but for any disease that plants its seeds there.

Treatment. The treatment of arthritis deformans is elimination. Keep the system well eliminated and then eliminate the effected joints by means of blistering. There is not one in the audience who has paid attention to rheumatism and, particularly, to arthritis deformans who will not admit that such cases, when sent to mineral springs and sanatoriums, are benefited by the treatment, yet the whole thing is eliminative. Elimination is secured by taking great quantities of water which contains sulphate of sodium and mag-

nesium and which moves the bowels a dozen times a day. The massage is eliminative. The baths are eliminative. The whole thing and all the treatment is eliminative.

But in arthritis deformans forced elimination does more harm than good as such cases are as a rule run down, the bowels constipated and the excretions checked. To deplete such cases is not wise. Such cases need a long and slow elimination, say for months and some times, in particular cases, for years. The health should be built up while this slow elimination is being secured. I have had cases under treatment for almost three years. Under slow elimination, such cases make a wonderful gain in flesh and strength without any tonics or anything.

Where there is contraction or fluid in the joints, they should be treated locally by the use of blisters, applying large ones to first one side then the other. As soon as it heals, use another. By using blisters, you establish local drainage and reduce the joint to its normal size.

The way blisters act as local drainage is this:—the brain sends impulses over the nerves to that joint which is being stimulated by the blister. The glands increase their activity under this stimulation and the secretions are carried out through the blister. That it does so, can easily be seen by examining the secretions through the microscope as well as by watching the enlarged joint return to its normal size. In treating the disease, we simply help nature. Nature knows how to take care of itself if only assisted, not forced.

I do not diet the patients but tell them they can eat just what agrees with them, not what don't agree with them. I direct them to drink lots of water and attend to the bowels at a certain time every day and see that they move freely every day without taking medicine for it. As a diuretic, I give small doses of potassium iodide. I commence with one grain after each meal, gain one grain a week up to five grains.

CANCER OF THE TONGUE BASED UPON THE STUDY OF OVER ONE HUNDRED CASES*

JOSEPH C. BLOODGOOD, M. D., Baltimore.

This study has lead to some very remarkable conclusions.

It has been demonstrated that the failure to cure when cancer of the tongue is fully developed is due chiefly to the neglect to remove the muscles of the floor of the mouth below the cancer.

The high mortality after operations for cancer of the tongue is chiefly due to the removal of the floor of the mouth without removing a section of the lower jaw.

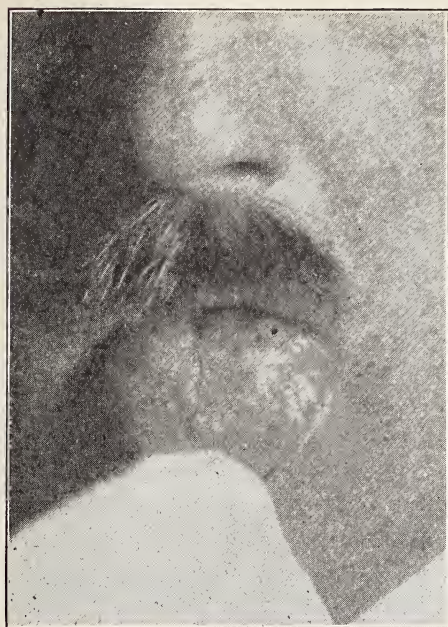
The investigation has also shown that if a lesion of the tongue is subjected to immediate operation within a few weeks after the onset of the lesion, the chances of a permanent cure are best. In this stage it will usually be sufficient to remove the local lesion with a good margin of healthy tissue, and this removal should be done with the electric cautery. The centre of the lesion should be preserved for microscopic study. When this is done, the chances are that the lesion will still be benign. But even though the lesion prove microscopically cancer, the probabilities of a cure are almost 100 per cent.

In the past surgeons have apparently removed too much of the tongue and have performed too extensive operations upon the glands of the neck. Now, this is theoretically incorrect, because cancer of the tongue infiltrates into the glands of the neck through the floor of the mouth. Should the glands be involved and the floor of the mouth not be removed, one could hope for little, if anything, from such an operation. If the glands of the neck are not involved, this does not preclude infiltration of the floor of the mouth.

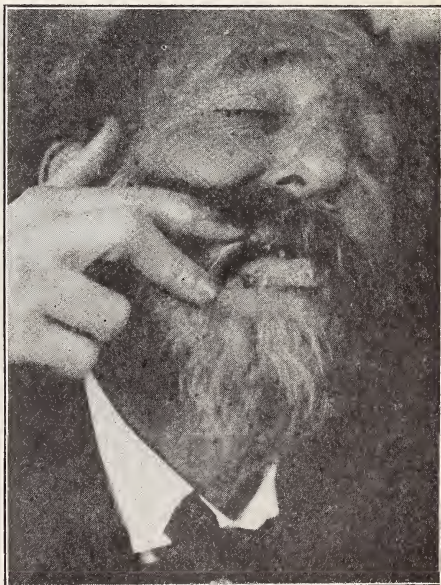
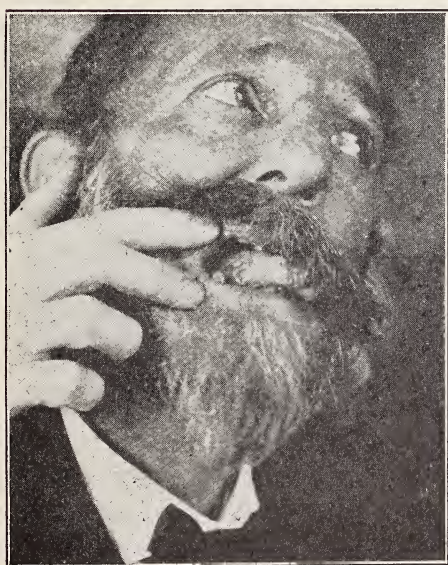
When the operation is performed in one stage it is impossible to remove the tongue, the floor of the mouth, and the glands, and then to close the opening in the mouth, unless a section of the lower jaw is also removed. If the former operation is done thoroughly, the mortality is very high—almost 80 per cent—from primary or secondary pneumonia, or a late infection from the oral fistula.

The author was first impressed with these facts when it was found that the first cured cases were either cancers originating in the floor of the mouth, or cancers of the tongue invading the floor of the mouth, in which it was absolutely necessary to resect portions of the lower jaw in order to remove the disease. The extent of the disease, therefore, forced the surgeon to the more radical and mutilating procedure, and allowed him to perform removal **enbloc**. During the same period earlier and more favorable cases were subjected to less extensive operations. When the floor of the mouth was not

*Author's Abstract of paper delivered before the American Surgical Association, New York, April 9, 1914.



Ep. T.—Tongue. M.M. Mouth—Leucoptakia. Dr. F.—J. C. B. 5500



P. No. 12901. Tongue, Carc. (S-481). Bauffer.

removed local recurrence always followed, and when it was thoroughly removed the patients died from the operation.

The author in November 1910 for the first time deliberately, in a favorable and early cancer of the tongue, removed the right half of the tongue, the right floor of the mouth, the right half of the lower jaw and the glands on the right side of the neck in one piece. The wound was closed by suturing the mucous membrane of the right cheek to the remaining half of the tongue. The patient swallowed at once after the operation, and no recurrence followed. The microscopic study showed that the floor of the mouth was infiltrated, but the glands were free.

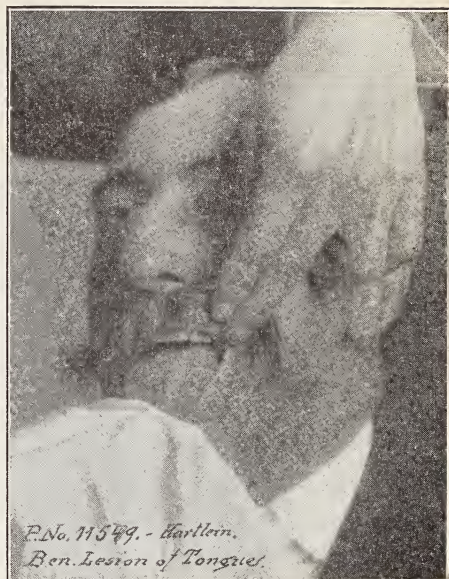
As the removal of the lower jaw, especially in the region of the symphysis, is mutilating, the author has attempted to accomplish the same results in a different way.

The glands of the neck are first removed and, after the operation, their connection with the floor of the mouth below the lesion is thoroughly burned with the cautery, and the wound closed. Then the lesion in the tongue or floor of the mouth is attacked with the electric cautery. The application of this is usually repeated two or more times, until everything is destroyed down to the area of the first cauterization from below. The healed skin flap of the first operation forms the floor of the mouth and prevents an oral fistula.

The first operation after this method was performed in April 1912—two years ago. The lesion was a cancer occupying the floor of the mouth between the tongue and the symphysis of the jaw. It was about the size of a silver dollar. Permanent cures have been accomplished in similar cases by **en-bloc** dissection of tongue, floor of the mouth, jaw and glands. The oldest case lived fifteen years, but this is a very mutilating operation, and the recent patient refused to submit to it. This lead the author to attempt what he had had in mind for some years. At the present writing—two years since operation—there is no evidence of recurrence and no mutilation.

Since then four cases have received this treatment with, so far, apparent success.

The majority of cases of cancer of the tongue seek surgical aid at an unnecessary late period. In every case the patient is warned. There is always something to be seen and felt in the tongue or floor of the mouth. If such a lesion is investigated at once, a local operation with the electric cautery should be sufficient; in a little later stage removal of the glands and repeated cauterizations in the mouth; in still later stages resection of the jaw must be done. The author's recent experience seems to show that this operation should be done in stages: first, through removal of the glands with cauterization of the floor of the mouth from the neck wound; second, cauterization of the lesion within the mouth; third, removal of the lower



P. No. 15432.—En. T.—XII—Tongue, Carc.

jaw and cauterization area. These points will be discussed in detail with illustrative cases in the complete paper.

When the cases observed up until 1908—a period of 18 years—are compared with those observed during the past five years, the influence of education is well shown. The very early precancerous lesions have increased from 8 to 30 per cent. The late and inoperable cases have decreased from 18 to 10 per cent. The cures have increased from 21 to 50 per cent.

When the author considers the cases personally operated on by him by these newer methods, in the past five years (14 cases in all) he finds that there has been no postoperative mortality, and so far but one patient is dead of recurrent carcinoma. In this case the lesion of the tongue had previously been subjected to operation, the recurrent tumor was extensive, and the glands of the neck involved. In this group every type of operation according to the newer methods just described is represented. At the present time there is evidence of recurrence in only one case, here the lesion was most extensive and the operation most radical.

The experience with these 14 cases prove the point as far as the immediate mortality is concerned, because considering all cases studied the postoperative mortality has been about 22 per cent. Since recurrences as a rule take place within one year of the operation, the results in these 14 cases also demonstrate that the improved methods promise a much larger per cent of permanent cures, and certainly a longer freedom from recurrence.

We have, therefore, apparently conquered the technic of operations for cancer of the tongue. Now, if we can educate men to come earlier, we shall probably conquer the disease.

A comparative table of results in cancer of the tongue as ascertained in 1908 and 1913 in the Surgical Pathological Laboratory of the Johns Hopkins Hospital and University is given below.

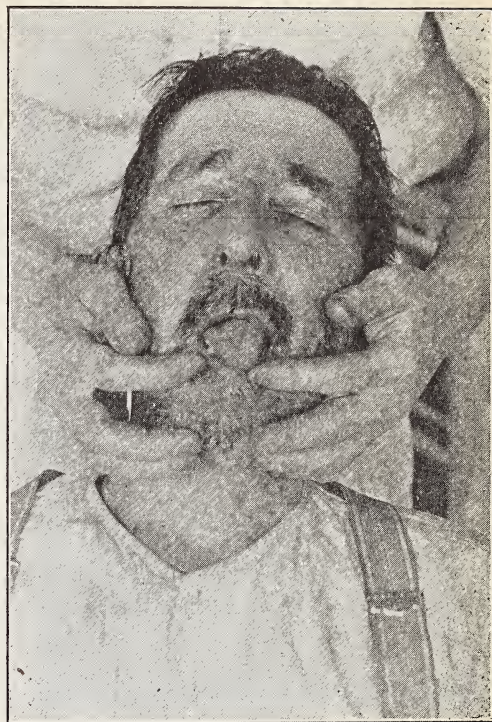
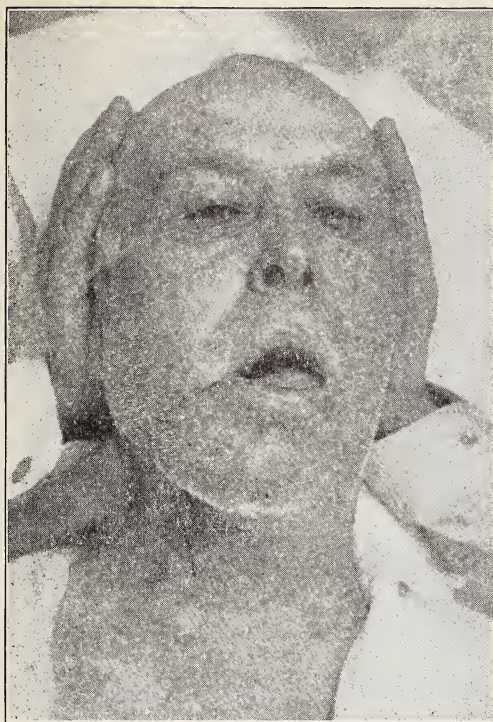
This table demonstrates that the local propaganda of education has increased the very early benign lesions from 8 to 30 per cent. In this stage 100 per cent of cures are always accomplished by proper treatment—the excision of the local area on the tongue under local anesthesia—a simple, painless operation.

The 4 cases of malignant warts have been cured. These represent the earliest stage of cancer. The operation necessary to cure is the same as for the benign lesions.

The inoperable, hopeless cases have been decreased from 18 per cent to 10 per cent. This, of course, is still too large.

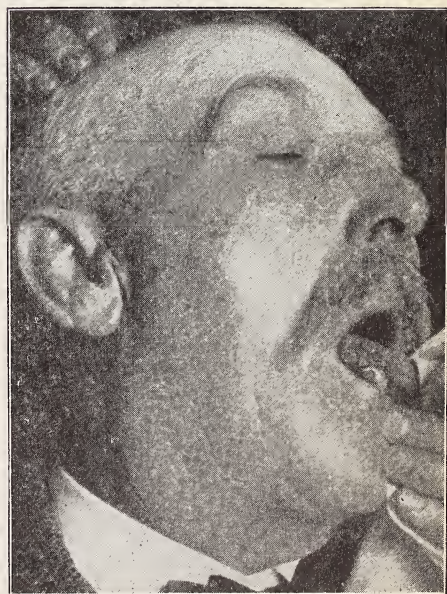
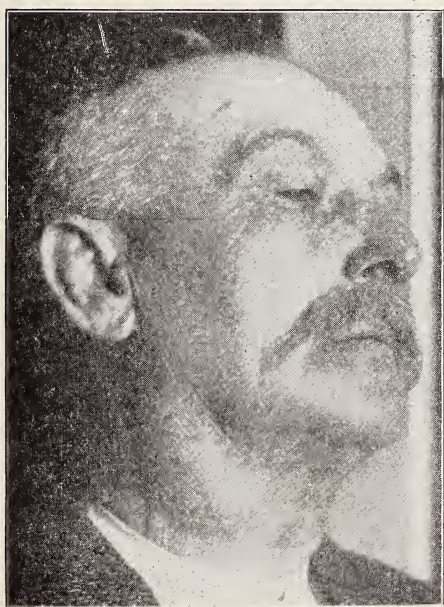
The post-operative deaths remain the same—about 22 per cent. These deaths, however, have only occurred after the most extensive operations for cancer in its very late stages and are the direct result of delay on part of the patient.

The cures have increased from 21 per cent to 50 per cent. The



15432.—En. T.—XII—Tongue, Carc.

P. No. 12901 Ep. T.—Tongue, Carcinoma.
Bauer. Photo. Febr. 8, '13.



En. T.—Tongue, XII—Carcinoma 15432.

improvement is really greater, because in the 1908 cases 15 have been lost

| | Totals | 1908 | 1913. |
|-------------------------|--------|--------|-------|
| All Cases | 100 | 70 | 30 |
| Benign Lesions | 15 | 6=8% | 9=30% |
| Malignant Warts | 4 | 3 | 1 |
| Cancer | 81 | 61 | 20 |
| Inoperable | 13 | 11=18% | 2=10% |
| Postoperative Deaths .. | 15 | 11=22% | 4=22% |
| Lost track of | 18 | 15 | 2 |
| Cured | 11 | 5 | 6 |
| out of cases | 36 | 24 | 12 |
| percent | 30% | 21% | 50% |



P. No. 14588. En. T.—XII—Tongue, Carc. Von Wachter.

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The Journal of the American Medical Association, Sept. 20, 1913. Vol. lxi, pp. 911-915.
The Great Danger of Incomplete Operations for Cancer in the Early Stage of the Disease.
Medical Herald, Kansas City, St. Joseph, Mo., November, 1913.
Cancer Control (Pre-cancerous Lesions, Cancer of the Breast, Cancer of Lower Lip).
Abstract of address before the Clinical Congress of Surgeons of North America, Chicago, Ill., Nov. 13, 1913.

Boston Medical and Surgical Journal, Nov. 27, 1913. Vol. clxix, p. 792.

Cancer Control.

Jour. Amer. Med. Ass'n, Dec. 27, 1913, Vol. lxi, p. 2,283.

Address delivered before the Lehigh Valley Medical Society, June 17, 1913.

Can it be Proved From Clinical and Pathological Records That the Number of Cures of Cancer Will be Greatly Increased by The Proper Excision in the Earliest Pre-cancerous or Cancerous Stage of the Local Disease?

American Journal of Medical Science, Jan., 1914. Vol. cxlvii, p. 76.

Read before the American Association for Cancer Research, Washington, D. C., May, 1913.

CHORIO-EPITHELIOMA, WITH REPORT OF CASE*

M. CHILDRESS, M. D., Oskaloosa.

Malignant disease of the uterus originating in embryonic tissue. This trouble was at first supposed to always follow the degeneration of a hydatidiform mole, but we now know that the presence of a mole is not necessary.

In 1889 Sanger and one or two other investigators each described a variety of malignant disease of the uterus strongly resembling decidual tissue and named it deciduoma malignum. Later investigators have brought to light the fact that the disease most always appears in the endometrium a few weeks or at most a few months after abortion, delivery at term, and especially after the expulsion of a hydatidiform mole or may follow tubal pregnancy; moreover the microscope has shown that the growth conforms histologically to the mantle of multinuclear cells covering the chorionic villi. This led to a change of opinion as to the source of the disease and the name of chorio-epithelioma was given the preference over deciduoma malignum.

The changes which take place are more in the epithelial elements than in the stroma of the villus, the epithelium undergoes proliferation and assumes invasive characteristics penetrating into and even through the wall of the uterus, causing perforation and in a few cases fatal hemorrhage into the peritoneal cavity. The uterus when attacked by this disease usually enlarges and may or may not be nodular, at first it is limited to the endometrium, may be small and cause no enlargement.

In a small per cent of cases the primary lesion is in the vagina and in tubal pregnancy in the fallopian tube.

Examination of a large number of specimens by many investigators has established the fact that the trouble always originates in portions of chorionic-villi which have remained imbedded in the en-

*Read before the Tri-County Medical Society, (Monroe, Marion, Mahaska counties), Sept. 25, 1913.

dometrium after the main products of gestation have been expelled.

The microscopic appearance of the growth is a soft reddish mass easily broken down as it contains no connective tissue stroma or blood vessels of its own.

The eroding power of its cells enable them to penetrate the tissues and even gain entrance to the blood-vessels by which means fragments are deported by the blood stream and produce metastasis in distant organs as the lungs, kidneys, or intestines as well as the vagina and other parts near the primary focus.

Symptoms and diagnosis: Profuse uterine hemorrhage coming on a few weeks after termination of pregnancy is the most characteristic manifestation of the disease. There is no pain, bleeding coming without warning and is profuse, will keep recurring every one to four weeks until you have a condition of profound anemia. Examination will usually reveal a uterus about the size of three months pregnancy, bleeding or a bloody foul discharge. The curette will bring away a quantity of placenta-like material and for a few days the bleeding will cease and the physicians may be led to believe that a portion of the afterbirth had been retained and he congratulates himself that his patient has escaped septic trouble and feels sure that the uterus is now empty and everything will be all right. In from two to six weeks he is very much surprised to get an urgent call with the information that his patient has had another hemorrhage.

Examination will disclose a boggy uterus, os somewhat dilated and cavity again filled with a foul, bleeding, friable mass. Usually there is a little temperature but if blood is examined no leucocytosis will be found but marked anemia.

This history is enough to warrant a diagnosis of chorio-epithelioma. If the physician had have sent a portion of the tissue obtained at the first curettment to the laboratory he would have been in possession of the facts sooner and his patient would have had a better chance for a permanent result from a radical operation. The disease develops rapidly and metastasis may occur at anytime and should be searched for. In a paper recently published in the *Anls. de Obs. et Gyn. Paris*; Pollosson & Violet compiled from the literature 238 cases which added to those reported by Briquel 217, brings the total to date to 445 to which I wish to add one (report to follow herewith.) Of these 203 were preceded by a known mole, abortion in 135, normal delivery in 88 and tubal pregnancy in 12.

Prognosis. Most grave. Early diagnosis will be greatly helped by systematic microscopic examination of the scrapings in all suspicious cases. The results would be good compared to other malignant troubles if subjected to radical operation early. Of the recorded cases 68 per cent recovered by early radical operation after mole cases, 58 per cent in abortion or delivery cases and only 33 per cent in tubal cases. Of those recovering 11 per cent were followed by

recurrence in from six months to two years none reported after two years.

Treatment. Should be prompt and radical even though the case be far advanced and metastasis has already occurred unless in some inaccessible part which in the very nature of things renders the case inoperable, she should be given the only chance she has. Cases of cure have been reported even where the secondary growth could not be eradicated as nature seemed to be able to take care of a small amount of the trouble after the primary growth was removed. Abdominal hysterectomy is the operation of choice in these cases as it gives a better opportunity to find out the condition of surrounding parts. The entire uterus should be removed including the tubes and ovaries if they appear diseased.

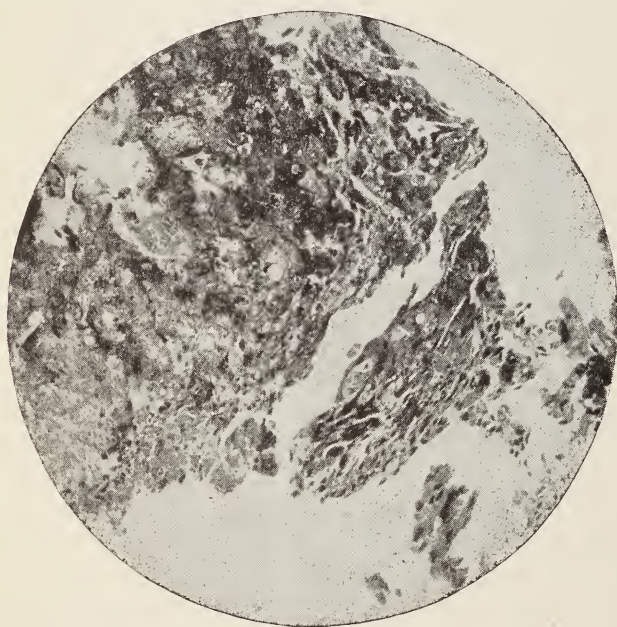
These patients are usually weak and anemic and demand rapid measures. The blood should be examined in all cases where there is marked anemia and if the hemoglobin test is 30 or below do a direct transfusion before trying to operate.

Report of a Case.

Mrs. V. R., age 26, married about 5 years, first child 3 years, baby 4 months, personal and family history negative, was confined with second child Aug. 18th, 1912; nothing abnormal was noticed until one month later she had a profuse hemorrhage. Family physician was called and cleaned out the uterus with a dull curette, there was some flow for a few days after which she was up and about the house feeling well except a little weak. On Oct. 15th, there was another hemorrhage and physician again cleared out the uterus. There were recurrent hemorrhages on Nov. 15th, Dec. 1st, and Dec. 16th, so in all the uterus was cleared of this placenta-like material five times, council had been called and a diagnosis of probable malignancy was made, and a specimen from the last curettment was sent to the laboratory.

I saw the patient first on Dec. 17th. The above history was obtained and on examination I found her condition as follows: Pulse 136, Temp. 100, Resp. 30. She was very weak and anemic, not much flow at this time as the last curettment had been done the day before. I advised taking her to the hospital for operation as the only chance of saving her life. An automobile truck was secured and the patient placed on a cot with plenty of blankets and hot water bottles, the roads were good and she stood the trip of twenty miles very well. On arriving at the hospital a blood test was made and less than 30 per cent hemoglobin was found, so we concluded to do a direct transfusion. A specimen of the patient's blood was tested with the blood of three prospective donors, no distinct hemolysis occurred but her father being a blood relative the lot fell to him. We had no special instruments at hand so were compelled to make our own. Some glass tubes were made and coated inside with paraffin according to the method of Brewer, clamps were devised by slipping small

rubber tubing over the jaws of ordinary hemostats. The transfusion was done under local anesthesia the radial artery of the donor was utilized and the cephalic vein of the recipient. We had considerable trouble making the connection on account of the blood clotting and stopping the flow, but finally succeeded. There was an immediate improvement in the patient's condition, and thirty-six hours later the abdomen was opened and the uterus removed. The growth had perforated the uterus and a slow hemorrhage was going on into the abdomen, with consequent soiling of peritoneum. Patient came through operation in excellent condition, and made a good recovery. Examination seventeen months after operation reveals no evidence of a recurrence, her weight is greater than ever before, and she seems in perfect health.



I felt discouraged when I found a perforation with so much soiling of the peritoneum, and I expected a speedy recurrence, but thus far she is all right.

To recapitulate:

(1) Be very suspicious of hemorrhage coming on a few weeks after pregnancy.

(2) Where curettment is done in such cases always have the scrapings examined by a competent pathologist.

(3) When you empty a uterus be sure it is empty, then if two to six weeks later you find it filled with a foul, friable mass you may be sure there is danger in delay.

(4) Direct transfusion is a practical procedure and a great help in anemic patients, and will often turn what seems to be a hopeless condition into a comparatively safe one for operation.

In closing I wish to give Dr. Boyd credit for the very able work he did in the laboratory. Also Drs. Roberts and Rodgers, who assisted in the operative work.

ANESTHESIA FROM THE STANDPOINT OF THE COUNTRY PRACTITIONER*

J. F. AUNER, M. D., Waverly.

If we believe with Keen, that the ideal anesthetic is one which annuls pain by abolishing consciousness, but without danger to life, we cannot consider the use of spinal anesthesia even if the country practitioner was sufficiently skillful to employ such a measure.

And moreover when the average country physician is confronted with the necessity of anesthizing his patient he is not equipped with the elaborate apparatus for the administration of nitrous oxide gas and oxygen so therefore a practical discussion of anesthetics in the hands of the country practitioner is necessarily a disquisition as to the relative merits of the two anesthetics which alone are in general use today, and the selection of the lesser of the two evils—ether or chloroform.

I shall only mention to condemn, in passing the old shotgun prescription, the A.C.E. mixture of our fathers which jeopardized the patient's life by the administration of two or more powerful poisons at the same time either one of which might intensify the action of the other or mask the ordinary danger signals of the one.

Without going into a scientific discussion of the matter, I am going to make the postulate that chloroform must be discarded as a routine general anesthetic. It produces too many immediate and remote deaths to warrant its general employment. We know that chloroform causes fatty degeneration of the liver with destruction of the liver cells and that this lethal change is in no wise confined to the liver.

I am perfectly certain that chloroform administration is a very dangerous procedure in the presence of acute bacterial toxemia.

And, I want to sound a note of alarm against the routine and unrestricted use of chloroform in obstetrics.

If we can rely upon our major premise then, we must conclude that ether is the one choice for routine general anesthesia employed either by the open or drop method. In Hewitt's *Work on Anesthetics*, in tabulating and following up over one million cases of general anesthesia, he finds that ether is a little more than six times as safe as chloroform.

*Read before the Austin Flint-Cedar Valley Medical Society.

In the administration of ether or any other anesthetic, I am a disciple of simplicity. Personally, I have no use for those fearful and wonderful engines of narcosis of the modern surgical instrument house. A simple nickle plated wire mask of ample capacity that has stretched over it about eight or nine thicknesses of ordinary plain sterile gauze is all the apparatus I need to reduce to a condition of surgical narcosis even in militant suffragette. A groove cut in the cork of the container, in my judgment gives the best control of the flow of the ether which is preferable given by the continuous drop method. At first the ether should be given with plenty of air—do not strangle your patient with large draughts of the anesthetic or insist on pressing the mask tightly against the face upon beginning the anesthetic!

I like to employ a folded towel, as the anesthetic progresses, about the lower border of the mask and occasionally a single thickness of a porous towel over the mask itself to gradually concentrate the vapor of the ether as the patient begins to lose consciousness and breathe more deeply and with more regularity.

I believe the best guide to the patient's condition is his respiration and his capillary circulation. If your patient is breathing regularly and not too rapidly and if the capillary circulation of the lobe of the ear is nearly normal, your patient is in no danger and it is both unnecessary and ungentlemanly to poke your finger in his eye. Watch and learn to interpret the patient's pulse and respirations, keeping his chin well forward and elevated. If you watch for the dilation of the pupil for a danger signal, you have much to learn in the administration of a general anesthetic.

The details of smearing the face with some unguent to prevent ether burns, the careful covering of the eyes to avoid the conjunctival irritation from the vapor as well as insisting on the patient's having an empty mouth are of course, elemental, but I want to emphasize the fact that an anesthetic well begun is half completed. In preparing a patient for an anesthetic whenever time will permit, the alimentary canal should be clean and empty. Never give a general anesthetic on a full stomach unless the exigences of the situation makes it imperative.

Personally, I am a believer in the almost routine practice of administering an eighth to a sixth of morphine and about 1-150 of atropine a half hour prior to the anesthetic for the double purpose of controlling nervousness and the hypersecretion of the bronchial tubes. I believe it is easier to anesthize a sleepy person than one on a lively tension with every faculty in violent revolt. Individuals who are addicted to alcoholic indulgences do better when given a good drink of whiskey a few minutes before the anesthetic. In every case we should see to it that the limbs are kept extended and if we are careful to secure this extension from the first either by pressure or binder, we will have little difficulty in keeping the pa-

tient on the table and restraining struggle in the beginning of the anesthesia.

It is of prime importance to secure the confidence of your patient on the outset. The psychic condition of your patient has much to do with the success of your anesthesia and the ease with which he succumbs to unconsciousness. It is here that mental suggestion is worth while and secures real results. Assure your patient that an anesthetic is not a difficult matter at all. Tell him that you are only going to give him a few drops with plenty of air just enough to put him to sleep and that soon he will awaken to find it all over.

Suggest to him to get his mind on something outside of the room and see to it that he does not become conscious of his breathing. Suggestions to the patient to breathe deeply or having him count in parrot-like monotony is often to defeat your own purpose.

The ideal position in which to administer a general anesthetic is supine with the head and shoulders a little higher than the pelvis, the chin held well forward. This partially reclining position is superior to the perfectly horizontally supine position as it protects the heart from over distention and the lungs from congestion. The high Trendelenburg position is especially dangerous to circulation and respiration during deep anesthesia.

One of the most dangerous postures to leave a very fat person is the Trendelenburg position for any length of time!

The head down position is badly borne with patients who have any mechanical or other obstruction to breathing and who have cardiac disease of any form.

And lastly and all the time during the administration of your anesthesia be constantly on the alert for cyanosis and remove your mask and discontinue the anesthetic at the first suggestion of circulatory disturbance.

TUBERCULIN IN THE TREATMENT OF GENITO-URINARY TUBERCULOSIS

LEWIS WINE BREMERMAN, A. B, A. M., M. D., Chicago, Illinois.

The experiments of Koch upon healthy and tuberculous guinea pigs brought about an entirely new epoch of scientific investigation which has lead to a specific therapy in tuberculosis.

In the early period of the work there was considerable harm done and a great amout of damage followed the use of tubereulin, for it was thought at that early period all patients suffering with tuberculosis would be irrevocably cured, as a result the remedy was administered indiscriminately, no matter in what form or degree the disease existed.

Like all new discoveries the pendulum swings too far in one direction, many years of careful experimentation elapsing before a point of equilibrium in scientific results is reached. Some of the results following the early administration were accompanied with such disasters that the profession and the world nearly lost one of the greatest therapeutic and diagnostic agents developed in the history of medicine.

Koch was sure of his position and took a firm stand, and with careful experimentation by himself and others, tuberculin is recognized by those who have had any wide experience in its use for its full worth.

The profession now recognizes the advantages and the limitations of tuberculin and with the knowledge of the good results obtained as shown by the voluminous literature and case reports place it definitely as almost a specific in the therapeusis of tuberculosis particularly in selected cases.

It is not the domain of this paper to consider any other than the surgical side of tuberculosis, and this will be limited to tubercular involvement of the genito-urinary organs.

The conclusions drawn from our discussions are the results of personal investigation and experimentation from actual cases under observation, together with the reports of others along the same line of work.

The experience gained covers a period of six years, reports of our cases, therefore, should be of some value scientifically as well as clinically.

Before one can intelligently discuss or administer a specific product employed in the treatment of infectious diseases, there must be primarily some experimental evidence based upon clinical results and secondarily these clinical results must be observed in a fairly large and typical group of cases and over a sufficiently lengthy period of time. There is no product in which this is so particularly

true as tuberculin used in the treatment of tuberculosis of the urogenital tract.

A careful study of the subject has brought the conviction that in tubercular patients with an active lesion elsewhere than in the lung, the protective substances are usually constantly low, due for the most part to the fact that the occurrence of auto-innoculation is to a great degree eliminated which gives more of an opportunity to estimate with a reasonable degree of accuracy the effect of tuberculin treatment; whereas in pulmonary cases the patients are to a greater degree subject to auto-inoculation so that by the discharges of the bacterial products from the seat of their infection back into the systemic circulation produces such a fluctuation in the control symptoms that it is frequently impossible to study and tabulate the effects of the tuberculin treatment with any degree of accuracy.

Tuberculin is a toxin elaborated by the tubercle bacilli in culture both as an extra-cellular or soluble toxin and is an intra-cellular or insoluble product and may be extracted by two methods, either by filtration of the culture media or by crushing and macerating the dead bacilli.

There has been much confusion experienced by the profession not fully understanding the various forms of tuberculin. A few words of explanation may clear this up. We have tuberculin B. F.; bouillon filtrate which is made by filtering through porcelain the bouillon in which virulent human tubercle bacilli have been grown. This preparation together with 5 per cent glycerine contains all the soluble products of the bacteria during their period of growth. Tuberculin (old) Koch is concentrated tuberculin made from pure cultures of tubercle bacilli, and differs from tuberculin B. F. in that it is concentrated by evaporation to 1-10 its original form. It contains 50 per cent glycerine which acts as a preservative.

Tuberculin T. R. (new tuberculin) is made by separating the water soluble constituents of the tubercle bacilli from the insoluble or cellular elements, these latter are brought into solution by prolonged grinding. This solution termed T. R. contains fewer of the toxic elements than old tuberculin. Experience with this product proves that it does contain immunizing remedial substances.

Tuberculin B. E. tuberculin emulsion is made from the bodies of the tubercle bacilli pulverized and suspended in glycerine solution; the bacteria having been first thoroughly washed and dried.

It is always wise to use the concentrated solution no matter what variety of tuberculin is selected. Dilute solutions will deteriorate in a few days, but the undiluted will retain its potency over a long period of time. When injected as a therapeutic agent it is supposed to stimulate and increase the defensive or immunizing powers of the tissues and body fluids against infection and its sequelae.

Tuberculin injections are contra-indicated where the pathologic changes are extremely acute or actively progressive, where the sys-

temic condition is markedly below par, or where there is a persistent febrile movement of over 100 degrees Fahrenheit, night sweats, chronic diarrhea, progressive loss of weight or extensive involvement of tissue.

Before mentioning the various modes of administration and dosage it will be necessary to speak briefly of the different preparations employed; there being two general classes of tuberculin. It has been shown above that tuberculin is formed by the interaction of the bacillus and the medium in which it is grown or extracts of the dried or crushed bacilli.

The former are the old tuberculins and have this in common that they contain the toxins; the latter are the new tuberculins and have this in common that they are all free from toxins.

We know little or nothing of the chemical composition of old or new tuberculin nor is there any efficient standardization of the numerous preparations and from clinical experience it has been found that the same dose of preparations manufactured by the same pharmaceutical house will have different effects upon the same individuals. I used several forms of tuberculin, but for the past 21-2 years I have been using Koch old tuberculin as a primary series prepared by Mister, Lucius and Brüning and have found this preparation to be more uniform in strength and may be used with the greatest degree of safety, although it makes little difference whether one obtains tuberculin from foreign or American manufacturers, but having begun the treatment of a patient with tuberculin obtained from one firm it is a good rule to continue the entire course of treatment without changing the supply as it has been found that two concentrated solutions having the same strength or standardization, but from different manufacturers vary in specific gravity, color and physical properties.

There are three methods of administering tuberculin. (1) By hyperdermic injections, (2) digestive tract (per orem), (3) by suppositories. The English school recommend very highly the use of tuberculin per orem given on an empty stomach early in the morning. This method does not appeal to the majority on account of the difficulty of dose regulation and the frequent untoward gastric symptoms such as pain and nausea. The suppository method may be condemned for the same reasons. The hyperdermic method seems to be the most scientific particularly in regards regulation of the dosage. The subcutaneous structures between the scapulae seems to be the most favorable location.

The dosage of tuberculin together with the choice of cases in which this remedy is applicable is paramount in importance in the administration of this product.

It is the consensus of opinion among genito-urinary surgeons that uro-genital tuberculosis is always secondary to tuberculosis of some other organ in the body, the tubercle bacilli having been car-

ried by the blood stream. The primary lesion is not always easy to locate, yet this may be the case when it is taken into consideration that the primary focus may have healed spontaneously. Spontaneous healing in the lung is frequently demonstrated at necropsy. The pathology surrounding tuberculosis of the uro-genital tract differs very little from that of tuberculous infections located elsewhere in the body. It is, therefore, difficult to outline which cases should or should not have tuberculin injections, except that it must be borne in mind to differentiate between operative and non-operative cases.

It is wise to differentiate between the operative and non-operative cases. The operative cases are those in which any of the organs of the genito-urinary tract are involved with a tubercular infection, whether it be located in the kidney, or the epididymus, provided there is not an excessive amount of tissue destruction or general constitutional impairment. For instance a case which will be reported later in which the epididymus and one testicle had been removed on one side several years prior to my seeing him, presented himself with an epididymitis with involvement of the remaining testicle, both seminal vesicles, prostate, bladder and posterior urethra with loss of weight, etc. This kind of a case may be considered an inoperable one. Kidney conditions in which the presumably healthy kidney is below normal in its functional activity. In which case an operative procedure upon the diseased organ is contra-indicated. Tuberculin in these classes of cases is indicated, producing such an important and beneficial change that frequently subsequent operations may be done with safety.

It is the consensus of opinion of genito-urinary surgeons that localized tubercular lesions should be operated upon just as soon as a diagnosis is made providing there are no contra-indications. I believe this is the most sane view to take of these cases. Tuberculin, in my opinion, is indicated in all patients subsequent to operation.

It has been quite an open question whether or not to administer tuberculin in cases that are running a temperature of over 100 degrees Fahrenheit. This question must be solved by the study of the individual cases, usually the temperature is due to the presence of some pathogenic infection and if this is the case it has been my practice to manufacture an autogenous vaccine and administer this together with the tuberculin. These secondary infections influence very unfavorably the course of the disease and must be carefully watched and treated.

As to the proper administration regarding dosage great care must be practiced as much harm may follow indiscriminate dosage. It is best to begin with very small doses and gradually increase in strength until a sufficiently large dose is reached which is not accompanied with untoward effects or reaction.

It has been my practice to begin with a minimal dose of .1 c.c. of 1-1000 dilution and to increase .1 c.c. until there is evidence of a

mild local and focal reaction. Injection to be given not oftener than once in five days. If there should happen to be untoward effects, such as marked local or focal reaction accompanied by a rise in temperature then it is best to stop injection for a longer period than five days, until one or more days have elapsed after temperature has reached normal. The next injection of tuberculin to be a smaller dose than the one which produced the reaction.

It has been considered advisable by some observers to regulate the dosage of tuberculin by the opsonic index. I do not consider this essential as routine, as the dosage may be computed by the reaction, yet it is of benefit to check the results from time to time by computing the indices as suggested by Wright.

Any febrile reaction must be strenuously avoided as this is apt to be followed with more or less untoward phenomena. An injection of tuberculin is followed almost immediately by a dropping of the opsonic index, a negative phase, followed shortly by a positive phase, an arising of the index. If too large a dose is injected the negative phase rapidly follows and lasts for a long period. During this period the resisting power of the patient is markedly decreased resulting in an increase of destruction in the tubercular focus. This phenomenon is accompanied with a rise of temperature even as high as 105, together with great prostration and loss of weight.

Hastings claims that the febrile reaction depends upon two factors. "The first since it occurs in healthy individuals following too large a dose partly non-specific; the second as a direct result of the specific working of tuberculin on the tuberculous tissue, partly specific, from soluble digested products being absorbed."

The reaction desired in these cases treated by injections of tuberculin is both local and focal, not of marked degree, however, and the dosage may be estimated relatively at least by these reactions.

Wassermann and Brueck have shown that in a large number of tubercular patients not treated with tuberculin there was evident in the tuberculous tissue antibodies against the tuberculous bacillus preparations. The blood serum was free from such substances. When such a patient is injected with specific tuberculin it may be demonstrated that the efficacy of the preparation depends upon the avidity for the antibody, since the antibody is located in the tuberculous tissue, hence the tubercle bacillus preparations proceeds to the tuberculous organs. The local reaction is produced by softening and dissolution of tissue which takes place after the tubercle bacillus preparation and antibody combines resulting in protein materials being dissolved and digested.

Hastings further points out that by the combination of the tubercle preparations and antibody, the protein or digesting substance in the blood is concentrated on the tuberculous tissue. He believes, that the efficacy of the working of tuberculin depends also upon the rapidity and amount of invasion of the blood stream by antibodies.

The specificity of tuberculous tissue occurs because tuberculin through their antibodies are drawn to the tuberculous tissue and by this means the tissue softening power is localized and concentrated in one area.

Time will not permit of going into further discussion and citing the opinions of others along these theoretic lines. Suffice it to say, that we are cognizant of the fact that from clinical experience such results are obtained and that great faith is put in the efficacy of tuberculin in properly selected cases.

Time will not allow for the detailed report of any cases.

Thirty-four cases have been under observation during a period of six years.

Sixteen cases of renal tuberculosis unilateral.

Five cases of renal tuberculosis bilateral.

Ten cases tuberculous epididymes, three cases inoperable of involvement of the epididymus.

There was one death in the group of sixteen cases of unilateral tuberculosis operated. The other fifteen cases with one exception have gone on to symptomatic cure or improvement. The one case died eighteen months after operation from pneumonia having made a fair recovery from the operation, gaining weight, etc., but the frequency of urination continued and was never controlled by treatment. This was one of the early cases and had no autogenous vaccines, but had one series of tuberculin of about forty injections. The remaining fifteen cases

Four under observation six years, symptomatic cure, treated with tuberculin and autogenous vaccines.

One under observation five years, symptomatic cure, same treatment.

Three under observation four years, two of these symptomatically cured and one improved.

Two under observation two years, both improved.

Two under observation two years, one improved, one unimproved.

One under observation a year and a half, still under treatment, but markedly improved.

One under observation one year, still under treatment, but improved.

Five cases of bilateral tuberculosis, three of which a nephrotomy was done upon the more diseased of the organs, two inoperable due to extensive pulmonary involvement. These cases were all dead within a period of twenty-two months although a carefully outlined course of treatment was instituted.

Ten cases of tuberculous epididymes all operated and all made uninterrupted recoveries from the operations. These ten cases are all symptomatically cured or improved. Three of them under ob-

servation at the present time. These cases were all treated with tuberculin subsequent to the operation.

Three inoperable cases, one still under observation, one treated with tuberculin by increasing doses, about eight or nine injections being given when he disappeared from observation, making marked improvement during time of treatment.

One case dying short time after treatment was begun with no improvement.

One case still under observation.

No specific for the treatment of disease may hope to be obtained from any procedure unless end results are considered. We see too many reports citing the value of certain methods of treatment whether medical or surgical that lose their scientific value because there is no attempt made to show what is accomplished by considering the condition of patients several years later.

In concluding I can not but believe that in tuberculin we have almost a specific remedy for certain types of genito-urinary tuberculosis.

Tuberculin should be given a trial in all very early cases of genito-urinary tuberculosis prior to any marked destruction of tissue or mixed infection. If mixed infection is evident during any stage of the disease autogenous vaccines should be made and administered in conjunction with the tuberculin. Proper care should be exerted in differentiating operative and non-operative cases. All operative cases should have tuberculin following the operation together with autogenous vaccines if secondary infection is present. In using tuberculin one should not overlook hygienic, climatic and dietary measures. Reactions should be carefully watched. Marked reactions should be strenuously avoided. Dosage should be carefully regulated, the initial dose being small and subsequent doses gradually increased in strength. There should be several series of injections in most cases to get the best results. It might be suggested if one form of tuberculin be used, such as old tuberculin, during one series another form such as new tuberculin should be used in the other series or vice versa.

Too great results must not be expected in a short time. Remember that many months must elapse before there may be any appreciable benefit obtained.

There is no doubt that tuberculin will be used to a greater extent than ever before with better results as the profession is beginning to realize its efficacy and is learning to administer it far more scientifically than in days gone by.

SOME BORDERLAND NEUROSES*

GEORGE KESSEL, M. D., Cresco.

About eight years ago I saw a lady, thirty-six years of age, of good personal and family history, who suffered for several years from shortness of breath. The shortness of breath would come on by spells, any time by day or night, and without regard to work or rest. They would come on during sleep at night, and when they would come on at these times, her husband would have to open the doors and windows to let in outdoor air, or she thought she would choke to death. The next day she would do a big washing. In addition to the shortness of breath she complained bitterly of a precordial distress, coming on and ending with these spells of air hunger. Examinations revealed no organic trouble whatever. Instead of strychnine and heart tonics which she had been taking freely without benefit, bromides and the nitrites worked a prompt cure; at least this patient has remained well since she was relieved eight years ago. It was impossible to discover the cause of her trouble.

This case is typical of a class of cases in which no definite cause can be found. There is another class of cases in which the cause is a prominent feature; and it is this class that confounds us when we come to a diagnosis, so closely do they simulate the organic. The following is a typical case recorded by Gowers:

A boy, eleven years of age, struck his head against that of another boy. The blow was near the left parietal eminence, but not severe. He had immediately some difficulty in speaking, and headache came on quickly. A few hours afterward a doctor saw him. He could then speak well but the pain was severe, and had begun to vomit. There was no sign of injury to the head. He went to sleep and the next day was quite well. He continued so for six months when one morning he started alone for a walk along a country road. In an hour he was found by the side of the road fast asleep. He was roused with difficulty and taken home; at once he went to sleep again and slept for several hours. He then said he had a little headache on starting; it increased, he felt he must lie down and at once went to sleep. A month later headache began in the morning, slight at first, gradually becoming severe, and again he went to sleep for several hours; when he woke up he was violently sick and then was better. Half an hour after the headache came on he felt a sensation of tingling in his lips and spoke with difficulty; his lips seemed stiff and could not be moved properly. This lasted about an hour and passed off before he went to sleep. After another attack he was feverish with a pulse of 120. The headache always began at a spot just behind the left parietal eminence and spread thence forwards, and backwards, but never went to the other side.

*Read before the Austin Flint-Cedar Valley Medical Society.

That this case was one of migraine admits of no doubt and was confirmed by the effect of treatment. Bromide was useless, nitroglycerine and strychnine arrested all attacks. It presents many instructive features. The excitation of the first attack by a slight blow on the head is unusual and was misleading. The immediate symptom might reasonably be ascribed to damage to the brain. The deep sleep in the second and subsequent attacks bore a suspicious superficial resemblance to the post-epileptic sleep, and vomiting is not uncommon after convulsive attacks. But severe headache never follows attacks too slight to be noticed; while vomiting is not a sequel to such slight seizures, nor does it follow prolonged post-epileptic sleep. It occurs soon after the attack. The lip symptoms occurred after the onset of the headache, instead of before it, and it is probable that the difficulty in speech was due to an inhibition of the lip movements rather than to actual contractions. One other feature deserves notice it is not connected with our present subject; it is the feverish condition which attended one attack. There is no doubt that in young children migraine is represented by feverish attacks with headache, which bear an alarming resemblance to meningitis, but pass off in about twenty-four hours to recur after a few months. These attacks may be replaced by simple headaches in later childhood. Apart from this the case shows how easily the features of migraine may mislead. The first attack excited by a blow, could scarcely have been interpreted aright.

The comments in substance are also by Gowers. In this case the injury, the blow on the head, was not the cause of the trouble. It only set in motion an inherited morbid process already more or less active, but up to date not obtrusive enough to be noticed.

What are some of the numerous neuroses, and can they be classified? It seems to me the following four forms may be clearly distinguished one from the other by definite groups of symptoms. They are, migraine, vagal attacks, fainting, vertigo.

To elucidate the case of the boy, reported by Gowers, migraine may be considered first.

What is migraine?

Migraine is a one-sided headache, intense, prolonged, subject to periodical recurrence, and preceded by premonitory sensory disturbances. The most frequent premonitory symptoms before headache are visual in their make-up. These are not so common as the aura of epilepsy, but still are not rare. The two differ principally in duration; before epilepsy brief, almost momentary; before migraine deliberate, progressive, occupying a quarter or half hour. There may be simple luminous discharge, the sufferer seeing a single star or person, never anything very elaborate.

Then these premonitory disturbances may take the form of peripheral sensations only. A sensation of tingling, like pins and needles, may be felt in the hand and slowly ascend the arm, leaving

behind it diminished sensibility or pronounced numbness. It occupies fifteen to twenty minutes in passing up the arm and as it ceases the headache begins on the opposite side of the head. A similar sensation may be felt in the face, especially near the mouth and in the lips, either after ascending the arm or independently. The lip sensation may be on both sides, involving the tongue. And when this sensation ascends the right arm there may occur a difficulty in speech, even to a complete aphasia for the time being. The recognition of this arm sensation is of great importance because it bears a close resemblance to the aura of Jacksonian epilepsy. The two resemble each other in quality, but differ in time; prolonged in migraine, momentary in epilepsy. One after effect of headache, however, should be mentioned in order to explain the case of the boy herein reported. One rare after effect is somnolence. This boy had headache, then became very sleepy, then vomited, and was better. There may also be delirium and unconsciousness following severe pain.

Vagal, or Vaso-Vagal Attacks.

Vagal attacks may be an unfamiliar and a meaningless term, but it is convenient for the purpose of expressing the nature of a disturbance of the functions of the vagus nerves. The symptoms cover subjective gastric, respiratory and cardiac discomfort, sometimes cardiac pain, and even a sense of impending death. With the vagal symptoms there are mingled symptoms of mental change, disturbances of the vaso-motor center, causing constriction of the vessels and resulting coldness, especially of the extremities. The attacks are never really brief. They seldom last ten minutes, more often they last over a half hour. These attacks recur at varying intervals during many months or years. If the cardiac pain is intense, as it often is, there may be loss of consciousness. If it were not extending this paper beyond the interesting minute I should like to report a few cases to help out in a clearer understanding of this subject, but that is not possible. Enough to say that we are all, some more than others, made unhappy by visceral sensations creeping up through the disordered functions of the pneumogastric nerves to our brains. Anyway, a general acquaintance with these affections cannot but be of great help to us as surgeons and physicians.

Fainting.

This subject will be passed over quickly as it is of such frequent occurrence as to be quite familiar. In making a differential diagnosis of this malady it is well to remember that it can be mistaken for an epileptic seizure. There is in this important difference. In fainting there are pallor, coldness, gradual loss of consciousness, relaxation. Recovery is by gradual lessening of faintness, gradual return of color, with no mental confusion following, nor followed by erroneous ideas or actions. In epilepsy there is never initial pallor. This may follow, but never precede the onset. This is also true of

the pulse. The onset is sudden and the attack is followed by a mental confusion, aberrant actions, sometimes even maniacal delirium.

Vertigo.

Vertigo occupies a large province and is prolific in instructive facts. The only English word co-relative with vertigo is giddiness. Vertigo has the definite meaning of turning, and hence is applied to any feeling of unsteadiness. The original meaning of giddiness was light-heartedness, and by easy transition probably became light-headedness. The sense in which it is popularly used is very wide, and includes every peculiar vague brain sensation, especially brief obscuration of consciousness, imperfect perception of surroundings, and the like. It is unnecessary for the purpose of this paper to consider the different forms of vertigo and their causes. The most distressing and obstinate form is due to some disturbance in the semi-circular canals of the labyrinth. This condition is sometimes called Meniere's disease, after the noted French physician of that name. The function of the canals seems purely to afford guidance to the position and movements of the head. Anyway there is no evidence that the canal nerves have anything to do with the function of hearing. Vertigo occupies so large a field, and its symptoms in so many diseases, both organic and functional, of the nerves and digestive systems, that it ought to have a paper by itself. I only mention the aural form because it has some symptoms in common with the other neuroses just referred to, the chief of which is loss of consciousness. The importance to us of a close acquaintance with these peculiar and distressing nerve manifestations is that they are of not uncommon occurrence, and any of them may be excited by a slight accident, as we have seen in the case of the boy, or by a sudden noise, as by the slamming of a door, or by mental emotion.

The most obtrusive feature of many of the functional neuroses is loss of consciousness. What is its cause?

In cardiac syncope loss of consciousness is its most obtrusive feature. But the loss of consciousness cannot be caused directly by the cardiac failure, which precedes and attends it, because consciousness is not the result of the circulation of the blood. The loss must be due to a state of the nerve elements of the brain—a state produced by the change in the circulation. A recognition of this fact is of great importance because consciousness may be lost from other causes. Loss of consciousness is also a prominent feature of epilepsy, but not always. In minor epilepsy consciousness may be only dimmed, a mere ripple on its surface. Just what the nature of the process is in the nerve elements on which this loss depends, we do not know. Neither do we know whether this process in the two maladies is the same, or is different.

Admitting that a change in the nerve elements accounts for the loss of consciousness, and that this change is caused by the failure of the circulation, another question must be answered. How is this

change brought about? The first answer to this question might be that the failure of the heart's action cuts off the supply of nutrition to the brain and thus renders the brain incompetent to maintain its highest function, which is to maintain a constant perception of conscious existence. But this answer will not stand critical examination. The renewal of the nutrition of the nerve elements, the supply on which their metabolic process depends, is from the plasma about them, derived from the blood, but for the time being, and the immediate purpose, is extra-vascular. The amount of this extra-vascular plasma, for any or several moments of time, must be adequate to maintain the nutrition of the nerve elements and the function that depends on them for its energy. Anyway, this answer fails completely when we consider the sudden and fatal syncope of aortic regurgitation. The calamitous death in this disease is clearly the result of syncope and is practically synchronous with the cardiac failure.

Another answer, plainly more adequate, suggests itself, namely, the mechanical effect of cardiac failure. In the arteries of the brain there is a constant pressure exerted by the force of the circulating blood, and this pressure must be considerable within the unyielding skull. When the heart suddenly fails to act the resulting diminution of the arterial pressure within the skull must be great, and the effect will be in proportion to its suddenness. The sudden arrest of the heart's action in aortic regurgitation must be mechanically equivalent to a stunning blow. The more gentle failure of the heart's action, and therefore the more gentle diminution of the intra-cranial pressure, in ordinary syncope or fainting, accounts for the more gradual loss of consciousness in that malady. The effect of a sudden blow on the skull, which abolishes consciousness without causing any visible lesion, is another example of a mechanical cause.

What this mysterious process is, which blots the victim out of conscious existence for the time being, though brief, we do not know. Neither can we frame an hypothesis which will be comprehensive enough to include its varied causation and enable us to say that it is the same in all cases. There is however one hypothesis which seems more reasonable than any other, and is therefore the more conclusive. Many phenomena in the nervous system can only be intelligibly explained on the assumption of a discontinuity of condition at the junction of the neurons which compose each conducting path. At such interruptions nervous impulses are re-excited instead of simply passing on. It is held by many authorities that this discontinuity is at the terminations of the branching process of the nerve cells, the dendrites. It is supposed that these structures, called dendrites, possess some mobility, some power of retraction and elongation, by which their distance from the exciting structures can be varied. A very slight movement may arrest the action of one set of structures on another set. It may entirely disconnect the higher centers which subserve consciousness from the lower centers

which subserve the motor and sensory functions. This hypothesis is perhaps incapable of proof. However, it enables us to understand that the process, which causes a loss of consciousness, may be the same in fainting, epilepsy, aural vertigo, some cases of vagal attacks, and in some cases of migraine, as well as in the cases of traumatism in which this last occurs. In epilepsy, and in some cases of traumatism, this process must occur in a wide region of the brain with great suddenness, or spread from a certain center with explosive rapidity.

All this may not be proven, but we must think in terms, and under the limitations, of our present knowledge and leave to the future the correction of our imperfect reasoning. What change in thought the future may have in store for us, we do not know. There is a prospect that the future will show us that all material elements will be discerned to be forms of electrical energy, and atomic combinations will resolve themselves into electrical flux and change. If so, organic chemistry must share the altered thought, and the mysterious electrical changes that attend nerve action may thus become intelligible. At present we cannot discern ground for framing any other hypothesis to explain nerve phenomena than the one just stated.—(Gowers.)

Professor Robert Koch in Iowa.

While Dr. Robert Koch was passing through the United States on his way to Japan in the spring of 1908, he stopped for a few days visit with his brother, Mr. Adolph Koch, a prosperous farmer living near Keystone, Iowa. Keystone is a town of 412 inhabitants situated on the Chicago, Milwaukee, and St. Paul Railway about thirty-eight miles west of Cedar Rapids.

The accompanying photograph was taken on Sunday, April 19, 1908 and represents besides Professor and Mrs. Robert Koch, Mr. and Mrs. Adolph Koch of Keystone, Iowa, another brother, Mr. Arnold



Mr. Arnold Koch
St. Louis

Mrs. Robt. Koch
Berlin

Mr. Adolph Koch
Mrs. Adolph Koch
Keystone, Iowa

Professor Robt. Koch
Berlin

Koch a merchant in St. Louis, Mo., who had come to attend the family reunion. For the privilege of publishing this photograph, I am indebted to Dr. O. W. King of Montezuma, Iowa, who formerly was in practice at Keystone, Iowa, and at the time of Professor Koch's visit was invited by the brother, Mr. Adolph Koch, to meet the distinguished scientist.

It will be remembered that while enroute to Japan, Dr. Koch accepted but few invitations to dinners or other public functions, the most memorable being that given in his honor by the German Medical Society of New York City on April 10, 1908.

He was particularly adverse to being photographed.

Des Moines, Iowa.

Walter L. Bierring.

THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

EDITORIAL

The Sioux City Meeting of the Iowa State Medical Society.

The Sioux City meeting of the State Society was well attended; the program was a good one, but unfortunately a rather unusual number of authors of papers failed to respond. It is always unfortunate for the Society when men on the program fail to be present and read their papers, as it leads to more or less confusion and some irregularity in the presentation of the program.

A general good feeling existed among the members of the State Society although there was an undercurrent of feeling that threatened to explode at any moment. Fortunately the factions were well under control and the leaders exercised good judgement in keeping the discordant elements from displaying in an open manner any movement that might threaten the harmony of the meeting. The chief element seemed to be the report of the Committee on Medical Education. It was apparent on watching the faces of the members of the House of Delegates, that there was a grim determination that nothing unseemly should appear on the surface, and while the members of the Society have not materially changed their views, yet the spirit of fairness was evident on all hands. The important questions in relation to medical education in Iowa must be settled by time, and it is to be hoped that those most deeply interested will be governed by such a degree of wisdom that nothing will occur to permanently affect the good reputation of our institution, nor the dignity and character of the profession of the state.

The attendance was as good as could be expected in a city located so far to one side of the state. The hotel accommodations were good and we heard very little dissatisfaction in regard to the accommodations which were afforded.

Dr. Albert's exhibition of the model laboratory excited a great deal of interest and will no doubt be productive of much good in advancing the scientific spirit of the doctors so located that they hitherto have been deprived of many of the advantages that come in large centers of population.

The Late Committee on Medical Education.

Editor Iowa State Medical Journal:—

May I ask for space for a few words of history and explanation? During the Friday morning meeting of the House of Delegates of the 1913 session in Des Moines, Dr. Max Emmert presented and the

House passed a resolution that "the retiring president appoint a committee to prepare a complete report on the present status of medical education in Iowa, the report to be presented at the House of Delegates at the next annual session." I was not a member of the House at that time, had absolutely no intimation that such a resolution was contemplated, I had no conversation with anyone, did not send or receive a communication of any kind, and gave the matter absolutely no thought until I received from the Secretary of the Society a letter stating that I had been appointed chairman of that committee. I felt then and still feel, that it is the duty of every member of a society, especially one that has received every honor within the gift of the Society, to accept and discharge to the best of his ability any obligation that the officers or his fellow members may impose upon him. As chairman of this Committee, I did an immense amount of work in the efforts to get at the facts and was reasonably successful. When the Committee assembled in Sioux City the day prior to the meeting, I had five copies of a preliminary report, one for every member of the Committee, and documental evidence substantiating every word in this preliminary report. After many hours of labor, the four members of the Committee present agreed on a final report. A member of the Committee that finally signed the minority report, was kind enough to assist and supervise the stenographer that drew up the final copy of the majority report. Everything seemed lovely. The feeling between the different members of the Committee was most amicable and so still continues. At eight o'clock on Wednesday the Committee met for a last revision of the report, and to affix signatures. After going over the report this final time, thirty minutes before the time set for the meeting, two members of the Committee bolted, refused to sign. Those present at the House of Delegates on Wednesday will remember that the Chairman of the Committee announced that the report in his hands had been signed by but two members. They will also remember that the President ruled that a report not signed by the majority could not be read, and that the President so ruled without waiting to have this point raised. Up to this time it was a matter of entire indifference to me whether the report was read or not. I had accepted and discharged to the best of my ability an obligation, and it remained for the House of Delegates to receive or reject the work that had been done. By not permitting the report to be read on Wednesday evening, those opposing the report, committed a very gross error. It was immediately rumored that "a fight was on" and a "fight" in a convention always furnishes delectable "copy" for reporters. The report by no means justified the rather extravagant statements contained in the public press.

After the Wednesday evening meeting, Dr. Dean, of Council Bluffs, was called on the long distance 'phone, and urged to be present on the following morning. He arrived in due time, and after

carefully studying the report, signed the same. After the majority and minority reports had been read before the House of Delegates on Thursday afternoon, Dr. Schooler moved that both reports be received and filed. Here again the ill-advised, kindergarten politics, reacted against the players. Had Dr. Schooler's motion been passed the matter would have been closed, and the House would have been ready for other business. But the instigators of the minority report were not satisfied. They wanted the matter settled then and there, and settled in their own way. The final result was the adoption of a resolution by a 10 to 33 vote, the resolution reading as follows: Resolved that the in-coming President appoint a special committee of three to which these two reports shall be submitted with full authority to report to the House of Delegates at its next annual meeting.

Some criticism has been made of the majority report because it did not contain suggestions. It will be remembered that the resolution creating this Committee called for actual conditions, which does not mean that the report shall contain recommendations. In fact, such recommendations would have been entirely gratuitous.

It is much to be regretted that a report that fails to be complimentary to every individual with a proposition must be immediately heralded by a few as antagonistic to the entire proposition, and until a proposition can be calmly and impartially considered, it will be very difficult to arrive at correct conclusions. After all, as a sincere friend and alumnus of the College of Medicine asked immediately after the report had been read, "What is all the talk about. There is nothing objectionable in that report." The report would have been received in the spirit in which it was presented, if a few kindergarten politicians had not attempted to throttle it.

Signed: L. W. Littig.

Increase of Dues of Missouri State Medical Society for Medico-Legal Purposes.

We take the liberty of copying into our Journal an excerpt from an editorial in the Journal of the Missouri State Medical Association in relation to the increase of dues on account of medical defense service.

"It is well that the dues were raised, for the defense benefit alone has taxed the treasury to a far greater extent than in any previous year and the expenses are still increasing. The cases are more numerous than formerly, because the members have come to realize that the defense committee renders a protective service that could not be offered through any other means. Attorneys fees are not as modest as in former years—whether due to the high cost of living we not hazard a guess—and the volume of correspondence and therefore, clerical hire, are correspondingly greater. In every other department the work of the Association has taxed the facil-

ities at the headquarters, but we are glad to say the members are responding with enthusiastic support to the activities which the Association has undertaken."

Responsibility of the Surgeon When Called to Treat Surgical Lesions.

Dr. J. C. Bloodgood in his opening remarks in a paper read before the A. M. A. observes that: "the easier the diagnosis is, the worse the prognosis." This statement hardly needs further comment or illustration. It is especially true in malignant disease. When the surgeon is able to recognize cancer by its clinical appearance the relative prognosis is bad. Complete operations in this stage yielded 30 per cent or less of permanent cures.

If at an exploratory incision the malignancy is not recognized, and a piece of the lesion is removed for diagnosis, or even if the entire local lesion is removed with a narrow margin of healthy tissue and later a complete operation is made, the prospect of a cure is less than if the complete operation is made at a later date. The significance of this observation is that an excision of a piece of tissue for microscopical examination materially increases the probability of dissemination, and is an element of danger. If for any reason it is desirable to excise a piece for diagnosis to avoid an apparently unnecessary mutilation, the wound should be cauterized with a Paquelin or electric cautery, and if the examination shows malignancy, the complete operation should follow as quickly as possible. For obvious reasons the clinical diagnosis should be chiefly relied on, but in the early stage of the disease it is sometimes difficult to determine if malignancy exists. This will depend on the skill and experience of the surgeon. If the hospital has a well equipped laboratory and a competent pathologist, a few minutes delay in the operation while frozen sections are made, will determine in cases of serious doubt, how complete the operation should be.

The object of operations for cancer or suspected cancer is to secure as large a per cent of cures as possible; therefore the most delicate care should be observed to prevent a dissemination of cancer cells.

In the April number of the Bulletin of the Medical and Surgical Faculty of Maryland, are published three addresses of unusual interest, delivered by Dr. Robert W. Johnson, Hon. Charles J. Bonaparte, and Judge T. J. C. Williams. These addresses were delivered at a recent meeting of the Health Conference, and we take the liberty to make excerpts from an editorial published in the above mentioned journal.

Dr. Johnson made a strong plea for the maintenance of those more conservative ideas which have long characterized the nobler spirits in the medical profession, regarding the relations of physicians to publicity.

Mr. Bonaparte laid emphasis upon the changes in conditions regarding publicity which have occurred in recent years. He pointed out that it is not alone physicians, but also lawyers, clergymen, politicians, and public men generally who, whether they wish it or not, are more or less compelled to submit to a certain amount of newspaper publicity. As he puts it, "everyone in public life today lives in a glass house, but the glass is not plain and colorless, but curved and tinted, too often giving a distorted or fantastically colored view of the inmate;" and he argued that, "if the image is, willy-nilly, to be presented to the people, the subject of presentation has, perhaps, a right to lessen the distortion and to prevent the falsity of color."

In Judge Williams' opinion, medical men are duty bound to keep the public informed in a proper way through the newspapers of advances in medical science, and feels that much greater use should be made than hitherto of the daily press for the dissemination among the masses of knowledge bearing upon the preservation of health and the care of disease.

It seems to be a fact that the average newspaper man has difficulty in understanding the attitude of the ethical physician towards the press. It may also be admitted that medical men are not as yet in entire agreement among themselves as to what may be called legitimate use and what is actually abuse in the matter of newspaper affairs. Any cooperation between medical organizations or medical men on the one hand, and the representatives of the press on the other, which is primarily for the good of the public rather than for the personal benefit of individual physicians, is praiseworthy. But any publicity, the object of which is the personal advertisement of a physician, is to be condemned.

The situation in which medical men find themselves is fraught with many difficulties. The sensationalism of much of the current journalism, the hasty publication of half-baked theories, the exaggeration of importance and distortion of the reports of scientific discoveries, the catering to the love of the public for intense personalities, are newspaper faults which are repugnant to sober and judicially-minded medical men. Again, the itch of publicity which characterizes the quack is so distasteful to the sensitive and conscientious practitioner that the bare mention of his name in public print, through no fault of his own, may cause him to wince. Judge Williams feels that medical men have grown too sensitive in this particular and that they often fail on this account, to enlighten the public on subjects concerning which it is their duty to give an opinion.

Some method should be worked out by which facts which will be helpful to the public and which the public have a right to know, can be widely disseminated through the newspapers, backed up by medical authorities who will command the attention and respect of

the people. But in devising such a plan, the best traditions of the medical profession must be safeguarded. No right-minded physician will consent to personal exploitation of the press for his own private financial profit, or, if he be not in practice for the gratification of his ambition by increasing his renown. Deprecating as we do all illegitimate publicity, we would at the same time advise charity in judging the motives of those who from time to time make use of the newspaper for the hygienic instruction of the people. There can be no doubt, too, that a certain amount of newspaper publicity comes to some medical men wholly unsought and despite real efforts to avoid it, and not infrequently this publicity is fully as sorrowfully observed by them as by the most critical of their colleagues. In such instances, if a man's conscience be clear, he must seek comfort in that fact, even when he knows that here and there a professional brother may suspect him of blameworthy complicity.

The titles of these three papers are:

"Medical Ethics and Publicity" by Robert W. Johnson, M. D.

"The Relation of the Public to the Profession" by Hon. Charles J. Bonaparte.

"Relation of The Press to the Physician and the People" by Judge T. J. C. Williams.

These three papers are very interesting, and we regret that we cannot afford the space to print them in full.

The Physician and the Claim for Accident and Sickness Insurance.

By R. D. Emery, Secretary of the Great Western Accident Association.

It is with a feeling of profound respect that the writer addresses the doctors of the State of Iowa through the medium of the State Journal on the subject above named. The service to humanity which is performed by the physician is second to no other service resulting from human effort. It cannot be estimated or adequately stated in terms. The office of the physician is as old as the race. Its place in the social economy is as permanent and firmly fixed as is the institution of the home or of the state.

The respect of any class to be worth while must be grounded in the feeling of self-respect on the part of those who render it to others, and when the business of accident and sickness insurance is well understood and has been properly classified, it will be found to perform a service in the economy of society not widely different in nature from that performed by the physician.

Insurance is benevolence reduced to a business basis. It encourages providence and thrift among those who have meager incomes; it maintains the self-respect of those who receive benefits in times of distress; it borrows from today's plenty for tomorrow's needs; it provides amelioration in advance of the calamity; it con-

verts the investment of the coldly calculating financier to the uses of the philanthropic enthusiast; it is the alchemy which transforms the base metal of selfishness into the pure gold of protection for the unfortunate; it diverts the vagrant stream of sordid selfishness from its crooked course and makes it irrigate the former desert place of "Helpfulness to the Distressed".

We are all aware that misdirected agents and even unprincipled officials of insurance concerns, as well as unprofessionally minded usurpers of the doctor's sacred office, have cast discredit both upon the profession of medicine and upon the high calling of the worthy insurer. In the small space I can occupy in this article, I shall address only the doctors true to their profession and refer only to the insurance men true to their ideal.

There seems to be some friction between the profession of medicine and the business of sickness and accident insurance which we must be compelled to believe is the result of misunderstanding brought about through the mercenary and unprincipled men who have misrepresented both the insurance companies and the medical profession. Every substantial insurance concern desires to make a just settlement of all claims against it. Every doctor, worthy of his profession, will sign no statement in regard to a claim which is not truthful or which is in any way misleading. Between parties such as these there is no room for acrimonious controversy concerning any matter which is based upon the principle of justice, and it is with this thing in mind that the writer has accepted the invitation of your editor to outline the ideas of the accident companies in the hope and belief that a fuller and better understanding can be arrived at by the consideration, on the part of the physicians, of the view which accident insurance concerns take in regard to doctors reports, and also by the consideration on the part of accident insurance companies of the views held by the medical profession in regard to the same subject. In presenting the side of the companies we shall studiously avoid charging against the medical profession the acts and reports of those renegade members who have deserted their profession to enter the ranks of that criminally minded class who are willing to conspire for the purpose of defrauding insurance companies.

It is proper in this place to state that all accident and sickness insurance companies must acknowledge the vast importance of the reports which only the physicians can furnish in regard to claims made for benefits, and there are no words too strong to express the appreciation which the companies feel toward the large majority of physicians who furnish these reports. The doctors are to be congratulated in the same way for the services rendered by these reports as for their successful treatment of disease, because these reports are an essential element in the proper application of the principles of insurance. Not only the just interest of their claimant, but

the foundation principle of insurance itself will be effected favorably by the careful and truthful report furnished by the physician in attendance.

Upon receiving notice that a claim is made for injury or sickness, as the case may be, the accident insurance company usually forwards at once to the claimant two preliminary reports, one to be made out by himself and returned to the home office and the other to be filled out by his physician. The preliminary reports are followed by Proofs of Loss to be made out also by the claimant and his doctor when disability ceases or becomes fixed. There are several reasons for sending both reports to the claimant. All policies, so far as we know, provide that the holder thereof waives his right to have the knowledge of his physician in regard to his case considered as privileged. Therefore the delivery of the report by the claimant to his physician with the request to fill the same out and send in to the insuring company releases the physician from any liability on account of making known facts which would otherwise be considered a privileged communication. Then it is ordinarily the duty of the claimant under his contract to furnish all reports required of him in order to establish his claim and the expense of furnishing such reports is, by the same contract, to be borne by the claimant. There are occasions where the insuring company wishes to secure outside information in regard to certain claims and when they deem this advisable they furnish a blank report to the physician in their employ and in all such cases the expense of making such reports is properly paid for by the insuring company.

It has been intimated in some instances that the insuring company should at all times employ the attending physician to make the report in behalf of the company and that in every case the insuring company should pay for all reports made out by the doctor for any claimant. It has also been intimated that in case this were done the service rendered to the insurance company would be much more satisfactory than that rendered by the attending physician when he felt himself to be under the employ of his patient who is the claimant against the company for insurance. We must confess that we cannot understand how the question of who is required to pay the bill of the doctor could in any way rightfully effect the report to be made out in regard to any claim. We may say in this connection that there is no question but that the physician should be fully paid for the services of making out his reports just the same as for any other service he may perform, but where it is a matter of contract between the insurer and the insured that it is a part of the duty of the insured to bear the cost of making reports in regard to his claim, we cannot understand how there can be any possible objection on the part of the attending physician to the claimant being required to carry out that part of his contract, and we believe that the overwhelming weight of opinion of the medical profession

will be that the report which is paid for by the claimant should differ in no respect whatever from the report which is paid for by the company.

Objection has been made by some of the physicians, with whom we have had dealing, that there are too many questions set out in the physicians reports; that many of the questions appear to be duplicates of other questions already answered and that others seemed unnecessarily technical. We received a letter not long since from a very estimable physician, for whom we have the highest respect, criticising our blanks on grounds very similar to those just given. We forwarded him one of our blanks with the request that he give us the benefit of his advice in a revision of the same and upon receiving it back from him it appeared that he had found only two of the questions which he thought unnecessary and suggested no other changes. We believe that our explanation in answer to his suggestion has convinced the doctor that it would be unwise to leave those two questions out. We believe after a little consideration every doctor will agree with us that the long period of experience through which accident companies have passed will have indicated to them the necessity of many questions whose importance would not readily suggest themselves to one who had lacked the experience, just as doctors will have reasons for using a certain line of treatment which no one unfamiliar with the case or with the science of medicine would be safe in criticising.

In the foregoing the writer feels that there are many phases of this subject which have not been touched, but those points which have been most usually under discussion have been touched upon and the feeling which actuates the accident insurance concerns have been given a measure of expression which, however, we feel to be far from complete. We trust that even so cursory a discussion may serve to open up the subject and ultimately bring the profession and accident insurance companies into a better understanding of each other.

We shall be gratified if the propositions herein set forth shall be given consideration and the views on the part of the profession concerning them shall be stated with perfect candor and freedom. Justice and equity to the insured, to his physician and to the insurer are what must be desired by all the parties whose desires are entitled to consideration. The securing of these ought to be facilitated by a frank discussion of any honest difference which may exist between the medical profession and accident and sickness insurance companies.

Responsibility on Surgeon Independent of Count of Nurses for Removal of Sponges.

(Davis vs. Kerr (Pa.), 86 Alt. R. 1007).

The Supreme Court of Pennsylvania reverses a judgment rendered for the defendant and orders a new trial because it does not consider that it was a sufficient defense merely to show that he relied on a count of sponges made by a nurse. The court says that the plaintiff had the defendant perform, at a public hospital, an operation on her for tuberculous peritonitis, when one of the sponges inserted, a piece of gauze about 12 inches in length, through somebody's mistake or negligence, was not removed, but was allowed to remain in the abdomen after the wound had been sewed up, and was not discovered until more than nine months following the operation, when a second operation was required for the removal of the sponge that had been overlooked. In this case the defendant, preparatory to closing up the wound he had made, inquired of the nurses whether their count tallied, and whether all of the sponges had been removed, and it was only on their replying affirmatively that he closed the wound. The evidence would support no other conclusion than that the defendant was misled by the mistaken count of the nurses. It certainly did not contemplate that the security on which the patient could rely for the avoidance of such mishaps, displacing entirely those which had before been recognized, among these the skill and observation of the operating surgeon, which had theretofore been employed and relied on to see that all sponges had been removed. It may well be that because of the additional security provided the burden theretofore resting on the surgeon was reduced: that whereas before it was his duty to take accurate count of the sponges, this duty being devolved on the attending nurses, the surgeon is enabled to give closer attention to the work immediately before him. The court can well understand how better results can in this way be achieved. But before the counting of the sponges by the nurses, and before the wound is closed, is it reasonable to suppose that no duty rests on the surgeon to employ his skill or observation to assure himself that no foreign substance has been allowed to remain within? This defendant did not understand the rule or practice as relieving him from all responsibility in this regard; for he testified that he supposed he had removed all the sponges and pads, and that, "when those were all removed, then my next step was to confirm that supposition by the statement of the nurse whose duty it is to count the sponges, and to have her tally with the nurse who is handling the sponges to me, the clean sponges, or the ones that haven't been used." In making the observation which led him to conclude that he had removed all the sponges, he was strictly in the line of his duty, and acting in accordance with the rules of the improved practice, according to his own testimony. Granting the

credibility of his testimony, the only question of fact remaining was: Did he, in making his observation, exercise reasonable skill, care, and prudence? The surgeons who testified in behalf of the defendant united in saying that it is only in most exceptional cases, if any, that the surgeon is warranted in exploring the restored parts after the count of the sponges by the nurses. The court can understand how this is a reasonable rule of practice; but it does not concern the court here.

The question related to what preceded the count by the nurses. Here the surgeon had reached the conclusion that he had removed all the sponges, a mistaken conclusion, but verified by the nurses' count. In reaching his conclusion, did he exercise ordinary skill? The court sees nothing in the evidence to warrant the inference that he did not; but, on the other hand, it finds nothing to warrant the inference that he did, which is far more important, since the burden of showing care was on him. Why was a foreign substance left in the parts which the operating surgeon should have removed? It was for him to acquit himself of negligence with respect to it. The sponge escaped his observation, why? Was it so hidden and concealed that reasonable care on his part would not have disclosed it, or were conditions such that in his professional judgment further exploration by him for sponges would have endangered the safety of the patient? In a word, did he do all that reasonable care and skill would require? Except as one or the other of these questions can be answered affirmatively from the evidence, the law will presume to the contrary, and attribute the unfortunate consequences to his contributing negligence. For all that appeared in the case, the retained sponge might have been discovered by the surgeon and reasonable prudence and care on his part would have avoided the accident. If this were so, clearly his negligence contributed with that of the nurses, and responsibility therefore in law attached.

Dr. E. C. McMeel died at his home in Delmar, April 21st, 1914. Dr. McMeel had been suffering for several years from a chronic myocarditis. Something more than a year ago he manifested some alarming symptoms which after several weeks of confinement in bed, improved sufficiently to allow him to attend to a part of his business. Dr. McMeel thoroughly understood his condition, and it was no secret to him that the end might come unannounced. He had been obliged to give up all practice that required any amount of physical exertion.

The Doctor had all his life been a consistent Democrat, and shortly before his death was appointed Postmaster at Delmar. Not more than ten days before his death Dr. McMeel was in my office and was expressing the comfort which he hoped to derive from being able to retire from practice and take up the agreeable and pleasant duties of Postmaster.

Dr. E. C. McMeel had high professional ideals and always refused to affiliate professionally with men whose professional standards were not of the same character.

Dr. E. C. McMeel was born in Delhi, Iowa, on the 26th of Sept. 1858. He was the second son of Patrick and Eliza McMeel. He received his preliminary education in the public schools, and entered the College of Physicians and Surgeons, Keokuk, Iowa, from which he graduated in 1880. He first located at Britt, Iowa, later at Kinross, Iowa, and going from there to Des Moines. He finally located in Delmar in 1888, where he practiced until he was obliged to retire about a year ago. For many years he had been local surgeon for the C. M. & St. P. Ry. Co., and at the time of his death he was a director in the People's Savings Bank. Dr. McMeel not only enjoyed the confidence of the community in which he lived as a medical practitioner, but also as a man of affairs. In 1886 he married Miss Fannie Scott who survives him. His only son died suddenly about eight years ago.

Resolution Adopted by State Board of Education in relation to Division of Fees governing the Medical Faculty of the State University.

It is quite probable that most of the members of the State Society are familiar with the troubles that have arisen at the State University at Iowa City. There seems to be some dissatisfaction among the medical faculty and a sort of hesitation on the part of the Board of Education as to the pledge Ex-President Bowman insisted should be signed by every member of the faculty.

In order that each member of the State Society may judge of the reasonableness of this requirement, we publish the Declaration required by each member of the Medical Staff.

"Resolved, That the following signed declarations be required of each member of the medical staff of the college of medicine of the University of Iowa."

"I hereby promise upon my honor as a gentleman that I will not, so long as I am a member of the staff of the college of medicine of the State University of Iowa, practice division of fees in any form. By this pledge I mean that I will not collect or accept fees for others referring patients to me or to whom I refer patients; nor will I permit others who refer patients to me or to whom I refer patients to collect or accept fees for me; nor will I make joint fees with physicians or surgeons referring patients to me or to whom I refer patients; neither will I in any way, directly or indirectly, compensate or receive compensation from anyone referring patients to me or to whom I refer patients.

"I will not utilize any man as an assistant as a subterfuge for the division of fees, nor employ any other subterfuge to that end, and in every way, to the best of my ability, I will observe not only the letter but the spirit of this pledge."

Action of Grace Hospital, Detroit, in Relation to Fee Splitting.

The practice of fee splitting would soon be eradicated if the management of the various hospitals would adopt the course of the Board of Trustees of the Grace Hospital in Detroit. If every hospital board denied the privileges of their hospital to every surgeon guilty of the secret division of fees, and permitted only those who refused to be parties to such commercial transactions and solicitors for surgical and consultation cases to use the hospital equipment, this evil would soon become extinct.

Feb. 17th a resolution was adopted, requesting the Board of Trustees to make it obligatory for all members of the attending medical staff to sign a Declaration opposing the practice of fee splitting and a soliciting of surgical work, as contrary to the general principles of medical and surgical ethics, and the welfare of the public. This was unanimously adopted and was thereby made one of the rules of the hospital.

New and Nonofficial Remedies.

Since publication of *New and Nonofficial Remedies*, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Scarlatina Strepto-Serobacterin, Mulford (Immunizing.—A sensitized scarlatina streptococcic vaccine, sold in packages containing three doses of killed sensitized streptococci. (The Council has at present no means for determining the identity and purity of serobacterins and these must therefore be used on the guarantee of the manufacturer, alone) (*Jour. A. M. A.*, April 11, 1914, p. 1168).

Phenolphthalein-Agar.—Phenolphthalein-agar is agar-agar impregnated with phenolphthalein, 100 Gm. containing 3 Gm. of phenolphthalein. It has the properties of agar-agar augmented by those of phenolphthalein. The Reinschild Chemical Co., New York (*Jour. A. M. A.*, April 11, 1914, p. 1168).

Causticks (Silver Nitrate 75 per cent.).—Wooden sticks 1 1-2 inches long, tipped with a mixture of silver nitrate 75 per cent. and potassium nitrate 25 per cent. Each stick is to be used but once. Antiseptic Supply Co., New York.

Caustick Applications (Silver Nitrate 75 per cent.).—Wooden sticks 6 1-2 inches long, tipped with a mixture of silver nitrate 75 per cent. and potassium nitrate 25 per cent. Each stick is to be used but once. Antiseptic Supply Co., New York.

Cupriesticks (Copper Sulphate 60 per cent.).—Wooden sticks 1 1-2 inches long, tipped with a mixture of copper sulphate 60 per cent., alum 25 per cent. and potassium nitrate 15 per cent. Each stick is to be used but once. Antiseptic Supply Co., New York.

Stypsticks (Alum 75 per cent.).—Wooden sticks 1 1-2 inches

long, tipped with a mixture of alum 75 per cent. and potassium nitrate 25 per cent. Each stick is to be used but once. Antiseptic Supply Co., New York (Jour. A. M. A., April 25, 1914, p. 1328).

Propaganda For Reform.

Theobromin Sodium Salicylate Versus "Diuretin".—Theobromin sodium salicylate, now described in New and Nonofficial Remedies and sold by most pharmaceutical firms, was first introduced under the therapeutically suggestive name "Diuretin". While under its proper title it can be bought for 35 to 45 cents an ounce, the proprietary "Diuretin" costs \$1.75 an ounce. An examination in the A. M. A. Chemical Laboratory has demonstrated that the quality of the product as sold under its chemical name is equal to that sold as "Diuretin". In view of these findings physicians should learn to prescribe the drug by its chemical name (Jour. A. M. A., April 4, 1914, p. 1108).

Tonsiline.—Newspaper advertisements assert that Tonsiline is "A quick, safe, soothing, healing antiseptic cure for sore throat". From an analysis made in the A. M. A. Chemical Laboratory it appears that a preparation like Tonsiline will be obtained by mixing one ounce of tincture of ferric chlorid, one ounce alcohol, 280 grains potassium chlorate with sufficient water to make one pint. It contains drugs whose use for the purpose for which Tonsiline is used are being abandoned. The objection to the indiscriminate use of Tonsiline, which represents a saturated solution of potassium chlorate, is evident (Jour. A. M. A., April 4, 1914, p. 1109).

Gomenol.—Gomenol is a volatile oil, which comes as a proprietary from France. The oil appears to be prepared from a plant closely related to that which yields oil of cajuput and the properties and therapeutic value of the two oils probably are about the same. Gomenol is sold under most extravagant claims (Jour. A. M. A., April 4, 1914, p. 1110).

The Value of Mineral Waters.—The unprejudiced physician who is seeking to avail himself of the best therapeutic aids which modern medical science affords, cannot help being baffled by the conflicting claims made by the crude balneotherapy of to-day. He sees numerous cases in which relief has unquestionably been obtained by patients who have visited one of the many springs in this country or Europe; but when he attempts to analyze the possibilities—including rest, change of diet and environment—and to determine some standard by which he may intelligently advise those who need his help, the result is a hopeless confusion of ridiculous claims. At present mineral water therapy is a hopeless confusion (Jour. A. M. A., April 4, 1914, p. 1097).

The serum Treatment of Tetanus.—The great value of anti-tetanus serum as a preventive is unquestioned. As a specific cure the serum has fallen short of expectation; nevertheless, it has decreased

the mortality from tetanus. Tetanus antitoxin acts only on the toxin not yet combined with the nerve cells. This emphasizes the early and liberal use of antitoxic serum largely by intraspinal introduction in order to neutralize the toxin that still is free and on its way to the nerve-cells, the necessity of thorough cleansing of the wound to remove all source of continued intoxication, and of conserving the strength of the patient in the hope that the morbid process caused by the toxin already in the nerve-cells may be overcome (Jour. A. M. A., April 11, 1914, p. 1174).

Salvarsan Therapy.—Wechselmann holds that the cases of salvarsan fatalities from encephalitis hemorrhagica were due to uremia, resulting from the irritation of the kidneys, in most cases damaged by administration of mercury. On the basis of this theory he argues for a pure salvarsan therapy in place of the generally combined mercury and arsenic treatment. He warns that salvarsan should be administered only after due consideration of the dose indicated and of the determination of absence of contraindications. No one can dispute that nearly all the deaths from salvarsan have been caused by its indiscriminate use, either in the face of contraindications or too large or too frequent dosage (Jour. A. M. A., April 11, 1914, p. 1175).

Wine of Cardui.—Wine of Cardui has vogue among women who prefer to take their booze in the form of "patent medicines". It is sold by the Chattanooga Medicine Company. John A. Patten, reputed to be the chief owner, is prominent in the Methodist Episcopal Church organization. Wine of Cardui is advertised as a cure for all manners of female diseases and though containing 20 per cent. of alcohol, women and girls are advised to use it indiscriminately. Examination in the A. M. A. Chemical Laboratory makes it probable that Wine of Cardui is a hydro-alcoholic extract of blessed thistle, containing a trace of valerian and that its medical properties are due principally to its alcohol content—20.36 per cent. absolute alcohol by volume having been found (Jour. A. M. A., April 11, 1914, p. 1186).

Urodonal, A French Proprietary.—Urodonal, which has been widely exploited in France, is said to contain lysidin, sidonal and hexamethylenamin along with other things and to have a uric acid solvent power thirty-seven times greater than that of lithia. As Urodonal is not to be found in New and Nonofficial Remedies, as the uric acid solvent powers of the three chief constituents are generally considered to be slight and as the solvent powers of lithium salts for uric acid are admitted to be practically nil, the extravagant claims for the new shot-gun proprietary do not inspire confidence (Jour. Mo. State Med. Assn., April 1914).

Hyperol.—Hyperol is exploited by the Purdue Frederick Company as "A Utero-Ovarian Corrective and Tonic" and is asserted to be "Indicated in all functional diseases of women". It is claimed

to contain hydrastin, aloin, iron salts, apiol and ergotin. A report of the Council on Pharmacy and Chemistry announces that Hyperol conflicts with the following rules of the Council: Rule 4, in that statements on the label and in the circular enclosed with the trade package advertise it to be public in the treatment of diseases; Rule 6, in that exaggerated and unwarranted claims are made for its therapeutic qualities; Rule 8, in that the name of this pharmaceutical mixture fails to disclose the potent constituents, and Rule 10, in that it is unscientific. The mixture is as unscientific as it is unnecessary. It cannot be adapted to any individual case; When ergot is indicated, apiol would naturally be contra-indicated; if aloes is appropriate, hydrastis may defeat the object sought. It is unnecessary because no intelligent physician would prescribe such a combination of drugs in any given case (Jour. A. M. A., April 18, 1914, p. 1271).

Friedmann Vaccine.—Referring to the exploitation of Friedmann's vaccine by ex-mayor Rose of Milwaukee, the Southern Medical Journal suggests that "Mr. Rose will be remembered by Alabama physicians as the apostle from the city made famous by certain brews of beer who a few years ago came into our state to instruct from the public platform our people regarding the health-giving properties of alcoholic beverages. He is probably prompted by the same philanthropic impulses when he attempts to inform physicians and the public of the 'miraculous results' of the serum that made Friedmann famous as well as rich." (Jour. A. M. A., April 18, 1914, p. 1272).

Friedmann and the Newspapers.—The officers of the Society of German Sanatorium Physicians protest against New York newspaper accounts which made it appear that their society had feasted Friedmann and endorsed his cure. Those who, incidental to a meeting of the society, inspected the Friedmann Institute were of the opinion that the cases under observation had been badly observed and as a whole could not be considered as successes or cures (Jour. A. M. A., April 18, 1914, p. 1273).

Pearl La Sage Complexion Treatment.—Pearl La Sage, Chicago, sells a beauty treatment by mail which is claimed "heals, soothes, cleanses, softens and beautifies the skin" and removes all kinds of blemishes. The treatment consists of tablets, capsules and laxative pills. The contents of the capsuls and the tablets are to be dissolved in water and splashed on the face, one at night and the other in the morning. Examination in the A. M. A. Chemical Laboratory showed the capsules and the tablets to contain as essential constituents, phenolphthalein, borax and sodium carbonate. The pills appeared to contain cascara or some similar drug and a little alkaloid, probably strychnine (Jour. A. M. A., April 25, 1914, p. 1345).

The Hypophosphite Fallacy.—The hypophosphites were introduced by Dr. Churchill as a specific remedy for consumption on the

theory, since proven incorrect, that phthisis was due to a lack of oxygen in the tissues. On the supposition that hypophosphites were oxidized in the body, he presumed them to be a source of energy for the nervous system. Not only does the evidence indicate that in consumption there is an increase of oxidation, but there is no evidence that phosphorus acts as an energizer of oxidation and further, there is no proof that the hypophosphites enter into general metabolism. Not only is there no evidence of the utility of hypophosphites but it has long ago been demonstrated that they are excreted unchanged. While the discredited hypophosphite theory is no longer contained in text-books, the fallacy is kept alive by proprietary interests, and physicians who depend for their therapeutics on the "literature" of proprietary concerns, still employ the hypophosphites (Jour. A. M. A., April 25, 1914, p. 1346).

Duket's Consumption Cure.—The backers of the Chicago exploitation of the Duket consumption "cure" now admit that the treatment is without merit, that it is vastly inferior to approved systems of treatment of pulmonary tuberculosis and that the treatment may lead to albuminuria. While the "cure" was given wide publicity through the newspapers, the public has not been informed of the unfavorable findings (Jour. A. M. A., April 25, 1914, p. 1347).

Radioactive Waters.—Waters whose radioactivity is due, not to radium itself, but to radium emanations will quickly lose their activity. As most radioactive waters do owe their activity to radium emanations, they must be used at the springs (Jour. A. M. A., April 25, 1914, p. 1348).

Prosecution of Research Workers.

Dr. Joshua E. Sweet, one of the six members of the faculty of the Department of Medicine of the University of Pennsylvania, has been on trial in Philadelphia during the last week charged with wanton and unnecessary cruelty to dogs. Indictments were brought under the state law forbidding cruelty to animals,

After forty-eight hours' deliberation the jury disagreed. Commenting on the case, The Journal of the American Medical Association says that, regardless of its ultimate outcome, this trial is of value as an illustration of the general principles underlying the position of the scientific medical profession on this subject. Briefly stated, these are that the use of animals for experimental purposes is absolutely essential to the progress of scientific knowledge for the control and suppression of human diseases. No greater calamity could befall the public than the curtailing of the liberty of scientific men to carry on such experimental work. Such a privilege, however, carries with it the responsibility on the part of all scientific men and institutions in which experimental research is carried on to take every possible precaution to avoid even the appearance of inflicting any unnecessary pain, hardship or suffering on the animals

which are the subjects of such experiments and through whose pain the human race is the gainer. This case, therefore, emphasizes what is generally recognized as a fact, that it is the duty of research workers at all times and under all circumstances to avoid inflicting unnecessary pain or discomfort on the animals that are being utilized for humanity's sake. Heads of departments and college authorities should—and we believe do—recognize their responsibility, not only for their own acts, but also for the acts of their assistants, subordinates and employees. It is no excuse for the head of a department to say that he has done nothing for which he can be criticized or that he has given directions to his subordinates to do certain things. He is responsible for their actions. It is directly incumbent on the responsible head of each department in which animal experimentation is necessary to see to it that everything possible is done to reduce the pain, discomfort and suffering of the animal to the smallest amount. When this is done, the responsible person should be held, not only morally, but also legally, accountable for any unnecessary or avoidable pain or suffering.

This leads to the statement of another fact, that the general laws relating to cruelty to animals, now in existence in practically all the states, are amply sufficient without any special legislation on the subject. There is no need of special laws against the infliction of pain on animals during scientific experimentation—such laws already exist. The same law that punishes the cruel or thoughtless teamster or cab-driver will also punish the cruel or thoughtless scientific man, if such exist. The Philadelphia incident is ample proof of this. The Pennsylvania law against cruelty to animals is sufficient to punish the person guilty of such cruelty, whether he be a professional man or a day laborer.

The Philadelphia case, it is understood, will be retried—let us hope before a more judicial judge and an impartial jury. As to the ultimate vindication of the members of the university faculty, *The Journal* has no doubt. This case can be made of untold value to the cause of scientific research as a demonstration, on the one hand, that general laws against cruelty to animals are entirely adequate for the control of scientific experimentation, and, on the other hand, of the grave responsibility which rests on all scientific men carrying on such experiments to avoid every possible cause for criticism.

An Endowed Teaching Hospital in Chicago.

An endowment of one million dollars has been given by Mr. James E. Deering to the Wesley Hospital, Chicago, an institution which on previous occasions has received generous aid from Mr. Deering's father and brother. Aside from the fact that the gift is large, it is worthy of special mention because of the unusual appreciation by the donor of how the gift can be made to do the most good. The income is to be used to help real charity patients, and the trustees have been requested to investigate the worthiness of

those who apply, so that the gift "shall contribute everything to real charity and nothing to pauperism." Even more worthy of note, however, is the statement by Mr. Deering that "the best hospital is that which is closely related to a good medical school." He stipulates that the Wesley Memorial Hospital is to be a teaching hospital, an adequate staff to be provided by the Medical Department of Northwestern University. It is also stipulated that the medical school "must maintain and strictly enforce a high standard of preparatory studies for the admission of students." Provision is also made for the maintenance of a free dispensary and of clinical laboratories, the medical school and the hospital to share equally the expense. Power also is given to the trustees if they deem it wise to provide for lectures on public health and hygiene to be "given to the poor public either in the hospital or elsewhere." In fact, Mr. Deering gave it as his purpose "to give to the trustees of the hospital the largest possible latitude in the expenditure of the interest on the fund, provided that it shall be used for the benefit of the deserving poor." That this gift need not prevent future mergers of medical colleges or the development of medical education in Chicago is made clear by the statement that "nothing in this deed of gift shall be construed as in opposition to the consolidation at any future time of the Medical Department of Northwestern University with one or more medical schools." In the opinion of The Journal of the American Medical Association, one who wishes to do for the deserving sick who are unable to care for themselves could not plan better than Mr. Deering has done. The bequest which he has made, however, will not only help the thousands of sick poor who will be cared for in the Wesley Memorial Hospital, but will also help thousands of others in the future, since it is to aid in the education of physicians, who thus may be more practically trained in the care of the sick.

Fraud Order Bars Medical Concern.

The Turnock Medical Company of 1770 Berteau avenue and the Deagan Building, Chicago, a concern which is alleged to have taken \$350,000 from the public by fraudulent means during the year ended May, 1913, was barred from the mails by the Postmaster General today. The company was reported to be receiving 4,000 letters a day.

George H. Read is reported as the sole owner of the concern, and W. Knox Haynes appeared as his counsel. Drs. Frederick A. Jefferson and James W. Hall, both of Chicago, appeared recently as expert witnesses for the company before the assistant attorney general. Dr. T. Frank Lynott is the "physician in charge" of the business.

Until a year ago, according to the evidence brought out, the concern was owned by Eugene Katz, but in May, 1913, he and Dr. Lynott were indicted by the federal grand jury at Chicago for using the mails to defraud in connection with this business.

MEDICINE IN IOWA PRIOR TO 1876

D. S. FAIRCHILD, M. D.

Iowa Hospital for the Insane at Independence, Iowa.

The Iowa Hospital for Insane at Independence was begun in 1869. The first commissioners of construction were Hon. M. L. Fisher, Hon. E. G. Morgan, and Albert Clark. The latter died in the following year and Hon. G. W. Bemis was appointed. He with the two first have had entire charge of the construction; the work being under the immediate control of Geo. Josselyn, architect and superintendent of construction. The main building and one wing are completed, and at the last session of the Legislature an appropriation was made for commencing the other wing.

In Sept. 1872, Dr. A. Reynold was appointed Superintendent. In May 1873 the first patient was received. The present number is two hundred and seventy (270). (1876.)

The first Board of Trustees was as follows: Hon. M. L. Fisher, Hon. Geo. W. Bemis, Hon. E. G. Morgan, Rev. W. S. Boggs, Dr. C. C. Parker, Hon. T. W. Fawcett, and Mrs. P. A. Appleman. The present Trustees are Hon. M. L. Fisher, Hon. E. G. Morgan, Dr. John G. House, Dr. C. C. Parker, and Mrs. P. A. Appleman. Dr. Parker's office expires in July and Dr. S. E. Robinson has been appointed to the place.

A. Reynold, M. D. (1876.)

Mercy Hospital, Davenport, Iowa.

Mercy Hospital is located just outside of the northwestern boundary of the city of Davenport, and some two miles distant from the central portion of the city. It was organized Dec. 7th, 1869. The buildings are admirably located on a somewhat elevated piece of ground and command a fine view of the surrounding country. The grounds about the buildings, which are beautifully laid out and ornamented with a variety of trees and shrubs, are of pleasing aspect to those patients necessarily indoors, and are well adapted to the needs and wants of those able to walk and ramble about. There are forty acres of fine rolling land connected with and belonging to the hospital. At present there are two buildings completed. A large brick building four stories high and devoted to the care and treatment of the general sick. This building contains about fifty beds. In it are the following wards: surgical, medical, lying-in and eye and ear. A little to the west and north of this building is a large frame building three stories in height. It is about three rods distant from the first named building and occupied by the insane. It will accommodate from forty to fifty insane patients. There is in progress of erection (some little distance north of main building) a hospital for the treatment of contagious diseases. It is to be two stories in height and is being built by the city and county. There

have been treated in Mercy Hospital since its opening, six hundred and sixteen (616) patients; of insane one hundred and eight (108). Some sixty operations have been performed, among them operations for ovariectomy, lithotomy, vesico-vaginal fistula, amputations, resections, carcinoma, cataract, etc. The average number of patients is about sixty.

Patients may be treated in the general wards for six dollars per week, medicines, physicians' and surgeons' bill included, unless a large number of extras are called for. A private room may be had for ten dollars per week.

The medical and surgical management of the hospital is entrusted to a Medical Board which at the date of organization was constituted as follows:

| Consulting Surgeons. | | Consulting Physicians. | |
|-----------------------------|--|-----------------------------|--|
| S. C. Plummer, Rock Island. | | P. Gregg, Rock Island. | |
| C. Truesdale, Rock Island. | | A. S. Maxwell, Davenport. | |
| | | J. J. Tomson, Davenport. | |
| Attending Surgeons. | | Attending Physicians. | |
| W. F. Peck, Davenport. | | W. A. Hosford, Davenport. | |
| Jas. McCartney, Davenport. | | D. C. Roundy, Davenport. | |
| Gust Hoeffmer, Davenport. | | W. D. Middleton, Davenport. | |

The present Board is composed of the following:

| Consulting Surgeons. | | Consulting Physicians. | |
|-------------------------------|--|-----------------------------|--|
| S. C. Plummer, Rock Island. | | J. J. Tomson, Davenport. | |
| C. Truesdale, Rock Island. | | A. S. Maxwell, Davenport. | |
| Attending Surgeons. | | Attending Physicians. | |
| W. F. Peck, Davenport. | | W. D. Middleton, Davenport. | |
| R. J. Farquharson, Davenport. | | A. W. Cantwell, Davenport. | |
| W. W. Grant, Davenport. | | J. W. H. Baker, Davenport. | |

These three adjuncts one to each term of service—they are as follows:—

- Dr. J. F. Baker, 1st. Div.
- Dr. B. F. Carmichael, 2nd Div.
- Dr. P. M. Braceliu, 3rd Div.

The departments of Ophthalmology and Otology are under the care of Dr. C. H. Preston, Davenport. House physician is Dr. Geo. W. Wilson.

On the first of March and the first of September of each year, a competitive examination of any medical students who may apply, is held for the position of House Physician.

The meetings of the Board are held on the last Thursday of each month, Dr. R. J. Farquharson, President, Dr. W. W. Grant, Secretary.

The general care and management of the institution is in the hands of the Sisters of Mercy. W. D. Middleton, M. D.

The Iowa Hospital for the Insane at Mount Pleasant, Iowa.

This institution had its origin in an act of the 5th General Assembly in the winter of 1855. In his message to the Assembly, Governor James W. Grimes urged the need of an institution of the kind for the insane of the state, of whom it had been ascertained there were then about one hundred, one half of whom it was said were lodged in jails, suffering much for want of proper care and judicious treatment, while the remainder were "at large, a terror to their friends and neighbors and by exposure to exciting causes rendering their disease hopelessly incurable". The same winter, while the General Assembly was in session, Dr. D. L. McGugin visited the capital, and in a publication ably advocated the foundation of a Hospital as recommended by the Governor. Dr. C. S. Clark, Dr. J. D. Elbert, Dr. Philip Harvey, and others warmly contributed their influence for the same purpose. It thus appears that to the medical profession is due a large share of the honor of the foundation of one of the most important of the benevolent institutions of the State, an institution that reflects in a high degree the philanthropy of any people in any age. The Legislature thus appears to have appropriated \$50,000 for this purpose, which became the nucleus of a hospital that is quite complete in most of its arrangements, and which has cost, including some expensive alterations and improvements suggested by progress in this specialty in medical science, in round numbers \$500,000. The building is constructed of fossiliferous limestone, ashlar lined with brick, with an air space in the walls to regulate the temperature and moisture. It consists of an administrative building, two, three and four stories, about sixty feet wide by two hundred and fifty feet deep, containing offices and officers' rooms, rooms for employes, an assembly room, or chapel, culinary arrangements, bakery, washing and ironing facilities, steam generating and motive power for all purposes, such as warming, cooking, water-supply, ventilation, etc. From each side of the administrative or central building extend awnings in four sections, each three stories high, for the accommodation of patients. These four sections afford twelve wards and for each sex, and are capable of accommodating about three hundred and fifty patients, but by reason of the rapid increase of the population of the State, the hospital has been crowded with many more. The building presents a front of five hundred and twelve feet, and from the extreme ends is a return wing about one hundred and thirty feet in extent. The hospital is lighted with gas, warmed throughout with steam, ventilated by means of a fan and a chimney one hundred and thirty-four feet high—the method of propulsion and exhaustion—and is supplied with water from a large reservoir. It has also excellent facilities for bathing, and the system of sewerage is well calculated to remove everything unfavorable to the maintenance of good health in the household.

Connected with the hospital is a farm of about three hundred and fifty acres, affording ample exercise grounds, shady walks, and drives, opportunities for landscape, gardening most of the milk and vegetables required for use, and abundant facilities for healthy labor of patients.

The hospital is under the control of a Board of Trustees, five in number, who are elected for four years. The Board hold four quarterly meetings and visit the hospital and thoroughly inspect it monthly by committees. They elect a superintendent and upon the nomination of the superintendent, assistant physicians, steward, and matron.

Patients can only be admitted to the hospital under the warrant of a body called "Commissioners of Insanity" in each county, consisting of the Clerk of the Circuit Court, ex-officio, and a respectable practitioner of medicine and a lawyer. Such regulations ensure a proper inquiry into, and examination of any case of insanity brought to their notice, and effectually precludes the oft reported reproach, however unfounded, that patients are admitted and detained in these institutions upon insufficient grounds or through improper motives.

The hospital was opened in March 1861, and at the expiration of fifteen years it had received thirty-one hundred and twenty patients. A large proportion of those who have been sent to the hospital have been cases of chronic incurable disorder, including epilepsy and other organic diseases of the brain, and chiefly incurable because they had been allowed to become chronic before they were placed under hospital treatment and management which has abundantly shown in the experience of a half century throughout the civilized world, to afford the best prospects of recovery from this great affliction, this "scourge of the race" as it has been called. Of all admitted, about thirty per cent have recovered while of those whose disorder had not existed more than a year before they were sent to the hospital, upwards of seventy per cent have recovered and a still more favorable showing could be made by including only those who had been insane a few weeks, or not exceeding two or three months. If it could be made more widely known and remembered that disorder of the brain, giving rise to insanity, rapidly tends to pass into an incurable stage or condition, and that in its early stage it is under favorable circumstances an eminently curable disorder, and if more prompt resort be had to the undoubted advantages of hospital treatment it is probable the proportion of insane persons in the state would diminish instead of increase, as there is some reason to believe is now the case.

The first superintendent was R. J. Patterson, M. D., who was assisted by D. C. Dewey, M. D., and in 1865 by H. M. Bassett, M. D. as second assistant. In 1865 Dr. Patterson was succeeded by Mark Ramsey, M. D., and at the same time Dr. Dewey resigned. The fol-

lowing year Geo. W. Dudley, M. D., was added to the medical staff. In 1871 failing health compelled Dr. Dudley to relinquish his duties, and his office was filled by O. W. Archibald, M. D. In 1873 Dr. Kulp was succeeded by M. Abbie Cleaves, M. D. In 1874 Michael Riordan, M. D. was elected third assistant physician. In 1876 Dr. Cleaves resigned and was succeeded by Jennie McCowan, M. D. The present medical officers are Mark Ranney, M. D., (Vermont Medical College 1849) Medical Superintendent, H. M. Bassett, M. D. (West Res. Coll. 1863) 1st Assistant Physician, Michael Riordan, M. D. (I. S. U. 1874) 2nd Assistant Physician, Jennie McCowan, M. D. (I. S. U. 1876) 3rd Assistant Physician.

The medical profession has been most ably and efficiently represented in the Board of Trustees by D. L. McGugin, M. D., J. D. Elbert, M. D., J. M. Shaffer, M. D., A. M. McClure, M. D., and E. S. Clark, M. D., the latter being one of the most original commissioners for locating, procuring plans, and superintending the erection of the hospital, the second of its kind west of the Mississippi River.

BOOK REVIEWS.

The Pathogenesis of Salvarsan Fatalities—Dr. Wilhelm Wechsellman, Directing Physician of the Dermatological Department, Rudolph Virchow Hospital in Berlin. Authorized Translation by Clarence Martin, M. D., First Lieut. M. R. C., U. S. Army; late Clinical Assistant St. Peter's Hospital for Stone and Other Urinary Diseases, London, Member Association Military Surgeons, Berlin Urological Society, etc., St. Louis, Mo. The Fleming-Smith Company, St. Louis, Mo. Price 1.50.

The author reviews the reported cases of death from salvarsan and neosalvarsan and attempts to show that death does not occur from the poisonous effects of arsenic. It is not due to a hypersensitiveness to arsenic for death does not usually occur from the first dose nor is it from an overdose as deaths occur following very small doses in patients who have previously had large doses. The clinical and pathological picture is not that of arsenic poisoning. In acute arsenic poisoning the symptoms come on rapidly and death occurs within a few hours while following 606 there is a latent period of several hours or days. Hemorrhagic encephalitis easily directs attention from the real seat of the trouble in the kidneys to the brain. The resemblance of the coma to uremic coma directed him to investigate the kidneys. He found insufficiency of these organs to be the cause of death in the great majority. In one of his own patients he found a large amount of urea in the spinal fluid and a great increase of the rest nitrogen of the blood. Nephritis at autopsy. Disturbed elimination of 606 occurs only in previously diseased kidneys. There is more danger in acute and subacute nephritis. In most instances the kidney damage is due to mercury treatment. It may be from the syphilis itself or from some former infection such as diphtheria or scarlatina. Normally all 606 is eliminated within 5 or 6 hours after intravenous injection. If 606 is given to a nephritic, oliguria with retention of the arsenic may occur. The retained 606 is reduced into other arsenic bodies as arsenoxide. The author uses 606 without mercury and in 3 years experience with over 25,000 injections he has had less trouble than he had before with mercury. Nearly all accidents have occurred where both mercury and 606 were used. Insufficiency of the kidneys does not explain all deaths. The remainder are

nearly all due to other organic disorders such as myocardial degeneration and coronary sclerosis. 606 apparently does not have a bad effect on the healthy heart and has a good effect on syphilitic vascular diseases. In cardiac weakness, however, 606 is an added burden. The cerebral type of death does not occur in subcutaneous and intramuscular injections. He groups the reported cases as follows:

1. Deaths following subcutaneous injections. 6 cases, all desperate and not due to 606.

2. Deaths following intramuscular injections. 15 cases which also died of organic troubles.

3. Deaths following intravenous injections.

(a) Those due to improper technic or to organic diseases, 25 cases.

(b) Those due to deficient kidney elimination as an effect of alcoholism, syphilis, or mercury. 10 cases.

(c) Pre-existing nephritis from mercury or syphilis, 13 cases.

(d) Cases in which mercury was not given. Very rare.

(e) Acute yellow atrophy. 6 cases probably due to 606.

(f) Deaths with inexact records and of no scientific value.

Most of these had organic lesions. 37 cases.

(g) Severe infections and chronic diseases in which 606 cannot be attributed as a cause. 10 cases.

Wm. H. Rendleman.

The Principles of Pathologic Histology. By Frank B. Mallory, M. D., Associate Professor of Pathology, Harvard Medical School and Pathologist to the Boston City Hospital. Octavo of 677 pages with 497 figures containing 683 illustrations, 124 in colors. Philadelphia and London. W. B. Saunders Company, 1914. Cloth \$5.50 net.

In the first place we should expect from Prof. Mallory a very valuable contribution and from the publishing house of W. B. Saunders Company a fine execution, and we are not in the least disappointed. The book is concisely written and in the clearest English. The paper is of the best and the figures and illustrations are works of art.

The first two sections of Part I is a beautiful (if the word may be used in this connection) presentation of the facts of inflammation and repair and to retrograde processes. Then follows special injurious agents and the lesions they produce. The remainder of Part I is devoted to the consideration of tumors.

A delightful feature of this book is the plain statement of facts and the avoidance of theories and speculations which so often confuse others than experts, for instance in relation to tumors the author says "We know a great deal about the gross and microscopic appearance of tumors and in regard to their classification, but nothing in regard to their cause, and little in regard to their origin. Much still remains to be learned. Experimental work on animals is throwing light on certain points, but continued observation and study of tumors occurring in man is likely in the end to be the more profitable line of investigation."

In creating a definition of tumors, the author points out what swellings should not be regarded as tumors, and says; "In this specific use of the term, a tumor is a new formation (usually a more or less circumscribed) collection of cells which proliferate continuously and without control; tend to differentiate as the cells from which they arose would do under normal conditions; serve no useful function; lack an orderly structural arrangement; and have at least at the present time, no assignable cause for their existence."

In regard to carcinoma no theories are offered, only a statement of how carcinoma grow. No mention is made of the irritative hyperplasia, secondary hyperplasia, and tertiary hyperplasia so beautifully set forth by Dr. McCarty.

Part II of this book treats of the pathologic changes in the structure of the organs of circulation, respiration, digestion, and genito-urinary organs in disease, also of the pathological histology of the blood making organs, spleen, and lymph nodes—and a final chapter on the organs of the central nervous system. It is rare that we have the pleasure to review a book written in such concise and direct language.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Professor Hobart Amory Hare, M. D., Assisted by Leighton F. Appleman, M. D.

The contributors of No. 1, Vol. 16, are all well known writers. Dr. Charles H. Frazer who writes the digest on Surgery of the Head and Neck is one of our highest authorities on these special subjects.

The first subject reviewed is the pineal gland, followed by a further consideration of the hypophysis. In relation to the pineal gland, after reviewing some recent experimental work, Frazier comes to the conclusion that this gland will be found to be "one of the links in that chain of ductless glands to which belongs the hypophysis, the thyroid, the thymus, the adrenals, etc."

In regard to the hypophysis, Frazier states that during the past year decided progress has been made in relation to the problems connected with this body. After reading the argument it is difficult to discover anything definite unless it be in the matter of diagnosis and its relation to sexual development. This discussion is interesting in that it shows how difficult investigations of this character are.

In the treatment of trifacial neuralgia, great progress has been made. To use Dr. Frazier's own words: "In few fields of cranial surgery has progress been either as well marked or as satisfactory as in the treatment of lesions of the trigeminal nerve". This progress has been in the direction of alcoholic injections of which Frazier speaks in the highest terms and which he uses almost without exception in cases where the pain is limited to one or two divisions of the nerve. We have had the privilege of publishing recently two valuable contributions on this subject by Dr. Ely of Des Moines. An interesting discussion follows on the technic as practiced by numerous authorities. Dr. Frazier has found alcoholic injections of decided value in the treatment of painless facial spasm or tic. A section is given to the discussion of intracranial division of the auditory nerve for persistent tinnitus and aural vertigo. Nothing very definite has been determined in relation to this treatment.

An interesting and valuable section is given to brain surgery, also to cancer and other tumors of the neck which we have not space to consider in detail.

Dr. John Ruhrah writes the section on Infectious Diseases. First comes a general consideration of the subject, methods of study of epidemic diseases, training of health officers, hospital management of contagious diseases, carriers of diseases, etc. Then comes a review of particular forms of infectious diseases including their treatment.

The section on diseases of children is short but well considered.

A more extended review of Rhinology and Laryngology by Dr. Geo. B. Wood and Otology by Dr. Arthur B. Duel.

In our opinion these Quarterly Reviews are of much value and very helpful to a just appreciation of the progress of medical inquiry.

Care of the Eyes, Control of Cancer. The Municipal Regulation of Milk Supply.

A Series of Pamphlets Issued by the Council on Health and Public Instruction of the American Medical Association. Ten of these Pamphlets are Prepared by the Committee on Conservation of Vision.

Pamphlet No. I. School Children's Eyes.—Frank Alport, M. D.

Pamphlet No. II. Industrial and Household Accidents to the Eye.—Harold Gifford, M. D.

Pamphlet No. III. Wearing Glasses.—Walter B. Lancaster, M. D., Boston.

Pamphlet No. IV. The Relation of Illumination to Visual Efficiency.—Ellis M. Alger, M. D.

Pamphlet No. V. Trachoma in Eastern Kentucky.—J. A. Stuckey, M. D.

Pamphlet No. VI. Auto-Intoxication and the Eye.—

Henry D. Burns, M. D., New Orleans.

Pamphlet No. VII. Eye Strain.—Hiram Woods, M. D.

Pamphlet No. VIII. Lenses and Refraction.—Frank Alport, M. D.

Pamphlet No. IX. The Eye and Its Functions.—Frank Alport, M. D.

Pamphlet No. X. Care of the Eyes.—Frank Alport, M. D.

The thirteen pamphlets constitute a series for public information, all prepared by well known authors and written in language free from technical phrases. They are prepared not for any particular class of readers, but for everyone interested in public welfare.

A History of Laryngology and Rhinology. By Jonathan Wright, M. D., Director of the Department of Laboratories, New York Post-Graduate Medical School and Hospital. Second Edition, Revised and Enlarged. Octavo, 357 pages, illustrated. Cloth, \$4.00, net. Lea & Febiger, Philadelphia and New York, 1914.

This work belongs to the type of medical book which is but rarely published, and then only in limited editions, which appeals to the physician for its literary and historic value rather than for its practical usefulness in his everyday professional life. It is a book which will afford him pleasure and recreation in his leisure hours, and from which, nevertheless, he will obtain much that will be of value to him in his daily routine. It will broaden his point of view, and give him a better perspective, not only of the specialty in which he may be engaged, but also of all branches of medicine, to see how the particular department reviewed herein has grown from crude beginnings to one of the most highly perfected of all the specialties. The author is not only a gentleman of eminence in the medical world, but also a literateur and a historian, and he has portrayed his subject in an interesting and charming style. Beginning with Egyptian Medicine, and continuing until the advent of modern procedures, Dr. Wright has given the reader a story full of entertainment and historic interest.

The Ready Reference Hand-book of Diseases of the Skin. By George Thomas Jackson, M. D., Professor of Dermatology in the College of Physicians and Surgeons, Medical Department of Columbia University, New York. Seventh edition, thoroughly revised. 12 mo, 770 pages, with 115 engravings and 6 colored plates. Cloth, \$3.00, net. Lea & Febiger, Philadelphia and New York, 1914.

This book has reached the seventh edition and has long been considered one of the reliable works in diseases of the skin. While written primarily for the general practitioner, it is also a work of ready reference for the specialist. Its statements are clear and concise, illustrations good and to the point. The plan of the work takes up the anatomy and physiology of the skin, diagnosis, and therapy. Diseases are taken up alpha-

betically, and considered in detail. The uses of vaccines, salvarsan and x-rays are able presented.

A good book for your table.

Infant Feeding. By Clifford G. Grulee, A. M., M. D., Assistant Professor of Pediatrics at Rush Medical College, Chief of Pediatric Staff, Cook County Hospital. Second Edition. Thoroughly Revised. Octavo of 314 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$3.00 net.

Not many months since, we reviewed the first edition of Dr. Grulee's work. The early appearance of the second edition attests the value of the book.

Part I. Fundamental principles of infant's nutrition.

Part II. Nourishment of the infant on the breast.

Part III. Artificial feeding.

Part IV. Nutrition in other conditions.

Under these grand divisions the care of the infant is well discussed.

Dr. Grulee presents the various subjects in a very interesting manner, making it a pleasure to read the book.

Iowa Geological Survey. Bulletin No. 4. Weed Flora of Iowa, 1913. 912 pages, By Prof. L. H. Pammel, Professor of Botany, Iowa State College, With the Collaboration of Charlotte M. King, J. N. Martin, J. C. Cunningham, Ada Hayden and Harriette S. Kellogg.

There is much valuable information in this volume, not only to the botanist and agriculturist, but to everyone interested in country or village life. Prof. Pammel estimates the damage from weeds to the crops of Iowa at \$25,000,000 annually.

Prof. Pammel gives the botanical and common names together with description of the various weeds by which they may be recognized, and presents the best methods of destroying them.

Iowa State Board of Health. Special Bulletin Issued in the Interests of the Embalmers of Iowa. The Medical Department of the State Government. Guilford H. Summer, M. D., Editor.

This Bulletin is full of information and should be preserved for reference. First Embalmers Law of Iowa. Information Relating to Quarantine and State Board of Health Rules and Regulations, and a List of Licensed Embalmers.

Brooks "Diagnostic Methods". C. V. Mosby Company, St. Louis, Mo. Price \$1.00.

The technic of all the ordinary laboratory tests is given in this little book. It is well classified, making a handy reference book for the laboratory worker. The most important tests and procedures are explained and many practical suggestions given. It is a book fitted to serve the needs of physicians and students rather than those of experts.—J. B. H.

Annual Report of the Chemical Laboratory of the A. M. A. Vol. 6, 1913.

This report takes up in detail a number of the frauds which have been exposed in the Journal during 1913. The chapter on the quality of drugs sold to dispensing physicians is well worth your attention. The price of the book is 25 cents, and it is worth it.

Sanitary Conditions Among the Eskimos.

A Report on Conditions in Native Villages Among the Arctic Coast

of Alaska. By Emil Krulish, Passed Assistant Surgeon United States Public Health Service. Supplement No. 9 of the Public Health Reports Dec. 12, 1913. Government Printing Office 1914.

SOCIETY NOTES.

The following quotation from the Indiana Journal is well worth your attention. This scheme has been worked frequently in Indiana and we know one Iowa physician who contributed \$165.00.

A Blackmailing Scheme.

A blackmailing scheme has been worked on some doctors of Indiana recently. A letter is sent to a physician from a presumably unmarried woman who writes that she is pregnant, almost crazed with fear, etc., and ending with a tearful appeal for the doctor's aid. Should an answer be sent, a young girl puts in her appearance. No matter what may be said, her visit is followed some weeks later by the visit of a man, who claims to be a relative of the girl, and who declares the girl has lost her life thru an abortion and the doctor's letter or card was found on her. As things are made to look bad for the doctor, the matter is offered for settlement out of court. By this means several physicians have been mulcted out of various sums.—*Jour. Indiana State Med. Assoc.*

If an affable salesman enters your office and tells you that he has been ordered by the firm he represents to present to you and several other prominent citizens a free copy of "With the World's People", an eight volume work, and in connection with this proposition calls your attention to the fact that the work is written by a noted historian, and thereby secures your attention, and then tells you that his firm, as a favor to you, is binding a certain number of volumes and that these volumes will be sent to you for the cost of the binding, but that it is absolutely immaterial to him whether you take the bound volumes at so much per, or the unbound volumes as a present, be sure to accept the unbound volumes and your contract will not cause you disappointment and chagrin.

L. W. LITTIG.

The Washington and Keokuk County Societies met in Keota for a picnic meeting Tuesday, May 26. The program consisted of three papers—French conception of Nephritis by Dr. L. W. Littig of Davenport; Headaches by Dr. Enos Miller of Wellman; Digitalis by Dr. J. G. Henderson of West Chester. At 6 p. m. the ladies had a long table arranged and the crowd enjoyed to the full the good things prepared. The Keota physicians and wives had charge of the supper and furnished the coffee and ice cream. Those who attended from Keokuk county were: Drs. J. E. Payne of Richland, T. E. Lawson and W. H. McLaughlin of Hedrick, Austin and Galloway of South English, C. B. Taylor of What Cheer, F. F. Piercy and Steirlen of Delta, Gardner of Webster, Cushman of Kinross, Alva and Cora Negus of Keswick, Rushing, Dings, Hinsdale, Kirkpatrick, Gray, Richardson of Keota. J. A. T. G. Dulin, W. W. Eastburn, A. P. Oliver, Wm. Phannebecker, of Sigourney.

There from Washington county were: Drs. J. G. Henderson of West Chester, Enos Miller of Wellman, Jos. Wolfe of Kalona, S. W. Huston of Crawfordsville, W. L. Alcorn of Ainsworth, M. T. Terry, W. S. Parks and R. O. McGuire of Brighton, J. E. Edgington, C. A. Boice, E. R. Jenkins, G. W. Hay, C. W. Stewart, E. J. Perry, C. W. McLaughlin of Washington, and D. S. McConnaughy of Wayland and L. W. Littig of Davenport. Nearly all the physicians were accompanied by their wives, some brought the children. Five nurses also attended. Although about one hundred were in the crowd.

The **Clayton County Society** held its annual meeting at the Clark Hospital, McGregor, Iowa, April 28th with an attendance of twelve members.

The following program was given: Acute Miliary Tuberculosis,—Dr. B. B. Everall, Monona, Maternal Dystocia Due to Malposition of the Uterine Cervix,—Dr. Chas. W. Duffin, Guttenberg, Tuberculosis in Clayton County,—Dr. E. Amelia Sherman, McGregor.

Officers for 1914 were elected: President, C. W. Duffin, vice-pres, B. B. Everall, sec-treas, W. H. Thomas, delegate, C. W. Duffin, alternate, H. H. Clark.

It was decided to hold the semi annual meeting in Oct. at Elkader. The society expects to hold some pleasant summer meetings of a business and social nature, which it is hoped will strengthen the ties of fellowship and promote the good of the members and the public.

A regular meeting of the **Wright County Society** was held at Belmond, Iowa, May 7th. Eighteen members answered to roll call.

The afternoon was spent in discussing Legal Protection, and listening to a talk by Dr. Kenefick, of Algona, on a new Perineal Suture, which was very interesting, and a clinic on nervous diseases by Dr. F. A. Ely, Des Moines. A number of cases were presented and Dr. Ely analyzed them in a very instructive manner.

A petition was ordered prepared to be signed by the different members protesting against the Nelson Amendment of the Harrison anti-narcotic bill, which was to be sent to Senator Kenyon and Cummins.

A banquet was served at the hotel in the evening.

Program of the third meeting of the **Tri-County Medical Society** was held at Marion county court house, Knoxville, May 28.

11:00—Minutes of last meeting read. Time and place of next meeting to be selected and other business matters pertaining to the society will be cared for.

Thermal Injuries,Dr. J. F. Stafford, Lovilia
The Effect of Injuries Upon the Nervous System,.....

.....Dr. S. W. Hartwell, of New Sharon
Anesthetics, With Reference to Emergency Use, Dr. Carl Mulky, Knoxville
Wounds, Open and Closed,Dr. T. E. Gutch, Albia, Iowa
Infected Wounds,Dr. C. N. Bos, Pella
Fractures, Dislocations and Sprains,Dr. F. L. Jarvis, Oskaloosa

On June 11th, the **Marion County Society** met in Pella for an all day session.

Program

Management of Normal Labor.....Dr. J. R. Wright, Knoxville
Discussion opened byDr. Carl Aschenbrenner, Pella
Toxemias of PregnancyDr. H. L. Bridgman, Columbia
Discussion opened byDr. E. R. Ames, Knoxville
Accidents of Labor.....Dr. L. E. Park, Tracy
Discussion opened by.....Dr. E. P. Bell, Pleasantville
Report of Delegate to State Medical Society.....
..... Dr. E. C. McClure, Bussey

On April 23d, 1914, the **Buena Vista Society** had for its meeting at "The Bradford Hotel," Storm Lake, this program:

Results of Nasal Obstruction in Children....Dr. C. S. Smith, Storm Lake
The Microscope in Diagnosis.....Dr. C. S. VanNess, Linn Grove

Polk County Society held its regular meeting for May at the City library on May 26th.

Program

Post Operative Hemorrhage..... Dr. H. A. Minassian
 Eye Strain and some of its attended Reflexes.....Dr. Frank A. Will

The meeting hour was changed from 8:30 to 8:00 P. M. and on account of the noise, it was decided to abandon the idea of meeting at the city library.

The **Fremont County Society** held an adjourned meeting at Sidney, April 30th, 1914, at which the following officers were elected:

President, T. C. Harris, Tabor; vice president, B. B. Miller, Tabor; secretary-treasurer, A. E. Wanamaker, Hamburg; delegate, C. E. Hoover, Hamburg; alternate, B. B. Miller, Tabor.

There was no formal program but there was a general discussion of subjects of importance to the profession. The next meeting will be held in Tabor in June.

Regular monthly meeting of the **Appanoose County Medical Society** was held Wednesday, May 27, at 8:00 p. m.

Program.

Subjects for the evening: "Treatment of Fracture by Lane's Bone Plate," and "Pellagra."

Exhibit of a Fracture case by Dr. Bamford, and a case of Pellagra by Dr. Harris.

Scott County Society met at New Kimball Hotel Tuesday evening May 5, at 8 o'clock.

Program: 1. Pathogenesis of Salvarsan Fatalities,—Dr. Wm. H. Rendleman, Davenport, 2. Ammonia Determinations as a Guide to Treatment of the Toxemias of Pregnancy and Eclampsia,—Dr. Frank W. Lynch, Chicago.

The annual meeting of the **Butler County Society**, was held at Allison May 8th. Officers for 1914 were elected as follows: president, J. G. Evans, New Hartford; vice president, H. Ensley, Shell Rock; secretary-treasurer, H. N. Bruechert, Parkersburg; delegate and alternate, T. A. Hobson, and J. G. Evans holding over.

Clinical Congress of Surgeons of North America; Fifth Annual Session, London, England week of July 27, 1914.

During the days of the Congress the clinics by eminent London surgeons will be observed by many visitors from America, Canada, the Continent, and the Provinces. At the evening sessions the scene will be changed, when the celebrated surgeons of the Continent, America, Canada, and the Provinces will reciprocate by furnishing the scientific entertainment to the members of the Congress and to the London surgeons, delivering messages on the live surgical questions of the day.

London is a great post-graduate center in medical instruction and training, and no doubt many of the younger visiting surgeons upon discovering the advantages to be gained by attending the London clinics will take this occasion to make arrangements for more formal and prolonged courses, either in the immediate future or later.

The headquarters of the Congress are ideal. The embankment suites of entertainment halls of the capacious Hotels Cecil and Savory, located side by side in the hospital center of London, have been secured for the registration rooms, exhibition halls, and evening meeting rooms. These

great hostelrys, with their combined capacity for more than fifteen hundred guests, are located within a stone's throw of many of the other famous hotels of London.

At the Hotel Cecil will be bulletined the clinics in General Surgery, Gynecology and Obstetrics, Genito-Urinary Surgery, Orthopedics, X-ray and Laboratory Demonstrations; at the Savory, the clinics and demonstrations in Surgery of the Eye, Ear, Nose and Throat. The program for Monday, July 27th, will be bulletined on Saturday afternoon, July 25th, two days before the opening of the Congress, and on the afternoon of each day of the session a complete, accurate program of the clinics and demonstrations to be given on the succeeding day will be posted on the bulletin board. The registration and bulletin rooms will also be open on Sunday, July 26th, for the accommodation of early arrivals.

A special reduction of 25 per cent to members of the Clinical Congress and their immediate families is being made by the International Mercantile Marine, which includes the White Star, Atlantic Transport, American Line, and Red Star Line, for passage to London after July 9th, with the exception of the S. S. "Oceanic," July 4th, for which they will grant the reduction; and on other lines after July 15th, with the exception of the Hamburg American Line, which will grant the reduction for the "Kaiserin Augusta Victoria" leaving on July 11th. The Cunrad and Allan Lines are granting the same reduction on and after July 2d and returning until August 27th from Europe.

In all cases, the minimum first class rate must be adhered to. Under no circumstances can the fare be less than the minimum rate. Further information and full particulars of all sailings can be obtained from Mr. J. P. McCann, Transportation Manager, Marbridge Building Broadway at 34th Street, New York.

Those who are directly interested should correspond with Dr. Franklin H. Martin, 31 N. State St., Chicago, for the complete program.

DEATHS.

Dr. Chas. Enfield, a graduate of the College of Physicians and Surgeons, in the city of New York, in 1870 and a resident of Jefferson, Iowa, since 1871, died at his home in that place, May 7th, 1914, from pneumonia, aged, 71. Dr. Enfield was a Fellow of the American Medical Association, and American Academy of Ophthalmology, and Laryngology; a member of the Iowa State and Greene County Medical Societies; a member of the American Association for the advancement of Science, and the American Association of Railway Surgeons; a veteran of the Civil War, in which he served in the Hospital Corps of the First New York Infantry.

Dr. James W. LaForce, College of Physicians and Surgeons, Keokuk, 1856. One of the pioneer physicians of Iowa, died at the home of his daughter in Bloomfield, May 4th, 1914, aged 87.



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